

## **SECTION 5.1 LAND AND SHORELINE USE**

### **(WAC 463-42-362)**

This section addresses the land and shoreline use issues applicable to the proposed Cross Cascade Pipeline, including the following subsections:

- Relationship to Existing Land Use, Land Use Plans, and Estimated Population (Section 5.1.1)
- Housing (Section 5.1.2)
- Light and Glare (Section 5.1.3)
- Aesthetics (Section 5.1.4)
- Recreation (Section 5.1.5)
- Historic and Cultural Preservation (Section 5.1.6)
- Agricultural Crops/Animals (Section 5.1.7)

### **5.1.1 RELATIONSHIP TO EXISTING LAND USE, LAND USE PLANS, AND ESTIMATED POPULATION**

#### **5.1.1.1 Existing Land Uses**

The proposed Cross Cascade Pipeline is approximately 231 miles in length and crosses six counties, including Snohomish County and King County west of the summit of the Cascade Mountains, and Kittitas County, Grant County, Adams County, and Franklin County in central and eastern Washington state (see Figure 2.1-1. The physical geography of the pipeline corridor varies considerably, ranging from the rural forests and woodlands of the western Cascade foothills to the sparse and arid rangelands of the Columbia Basin.

The proposed pipeline route traverses several types of terrain, land uses, and ownerships. In addition to the six counties, the route crosses federal lands under the management of the Forest Service (U.S. Department of Agriculture); the Bureau of Reclamation and the Bureau of Land Management (both under the U.S. Department of the Interior). Portions of the route lie within the cities of Snoqualmie, North Bend, Kittitas, and Pasco. Characteristics of terrain, land uses and general land ownerships are shown in the Map Atlas (Appendix A).

Many areas of the pipeline corridor consist of existing right-of-way such as transmission line corridors and public trails, while others are less developed and would require new right-of-way. With the exception of small areas of urban residential uses near the western end of the pipeline, most of the corridor is rural or devoted to natural or agricultural resource use. The impacts of the pipeline would vary, depending upon the existing land use, the level of previous development, and other factors.

In addition to the pipeline, the proposed project will include 6 pump stations along the pipeline route and a storage/distribution facility located south of the town of Kittitas. A description of these facilities and the surrounding land uses is provided at the end of this subsection ("Kittitas Terminal and Pump Stations").

For the purpose of describing existing land uses along the pipeline corridor, the corridor has been divided into segments. Typically, a segment division occurs where the underlying land ownership of the pipeline corridor changes. Each time the status of the underlying land ownership or entitlement changes, a segment division occurs.

Six land use categories are used to describe existing land uses within the corridor. These land use categories are defined as follows:

**Urban (UR)** - Land which has been developed at varying densities, typically with suburban subdivision characteristics. Some commercial or industrial uses may be present.

**Rural (RR)** - Land which has been developed for residential use on larger parcels, typically in excess of 2 acres, and often much larger. In some rural residential areas, land may be used for agricultural or left in forested conditions, but the primary use of the land would not be considered commercial agriculture or forestry. Some small commercial or light-manufacturing uses may be present.

**Forest (F)** - Includes public and private forest lands and tree farms. Forested areas may be designated for recreational uses.

**Agriculture (AG)** - Includes irrigated cropland and dryland farming (grains).

**Rangeland (AG)** - Includes land which is used for, or is suitable for grazing of livestock. This category also includes arid lands which are marginally suited or unsuited for either crops or grazing.

**Recreation (REC)** - Includes both public and private recreation areas and facilities. In many cases, the area or facility may be forested or be within an area used for forest harvest.

Land uses are described for the area encompassing one mile on either side of the pipeline corridor. Figures 5.1-1a through 5.1-1f illustrate these land uses. In these figures, Agriculture and Rangeland land use categories were combined and displayed with the symbol AG.

FIGURE 5.1-1a - LAND USES ALONG THE PIPELINE ROUTE

FIGURE 5.1-1b - LAND USES ALONG THE PIPELINE ROUTE

FIGURE 5.1-1c - LAND USES ALONG THE PIPELINE ROUTE

FIGURE 5.1-1d - LAND USES ALONG THE PIPELINE ROUTE

FIGURE 5.1-1e - LAND USES ALONG THE PIPELINE ROUTE

FIGURE 5.1-1f - LAND USES ALONG THE PIPELINE ROUTE



## Pipeline Route

Land uses occurring along the proposed pipeline corridor are described below by county, segment, and milepost (MP). A table for each County of existing institutional, commercial and industrial uses within a mile of the proposed pipeline corridor is included in Appendix C as Table C-1.

### Snohomish County

**Segment 1 (MP 0 to MP 8.15):** *Urban and Rural Residential.* Segment 1 begins at the proposed Thrasher Station, located on 46th Avenue north of 212th Street SE and north of Olympic Pipe Line's existing Woodinville Pump Station. This segment lies within existing Bonneville Power Administration (BPA) right-of-way. Land use on either side of the pipeline route is urban residential, changing to rural residential in the Maltby area and approaching the Snoqualmie River. Road crossings include Maltby Road, Highway 9, Broadway, Highway 522, Echo Lake Road, Welch Road, and High Bridge Road.

**Segment 2 (MP 8.15 to MP 9.3):** *Agricultural.* Segment 2 begins at the crossing of the Snoqualmie River and is comprised of agricultural land still within the existing BPA right-of-way.

**Segment 3 (MP 9.3 to MP 11.9):** *Rural Residential and Forest.* Segment 3 lies within the BPA right-of-way in a rural residential area and second-growth forest. This segment crosses High Rock Road.

**Segment 4 (MP 11.9 to MP 13.0):** *Forest and Rural Residential.* At Segment 4 the pipeline leaves the BPA right-of-way and crosses clearcuts, young forest, and rural residential areas. This segment crosses West Lake Kayak Road and Kayak Lake Road.

### King County

**Segment 5 (MP 13.0 to MP 21.00):** *Rural Residential.* Segment 5 begins north of the Snohomish-King County line, rejoining the BPA right-of-way northeast of Harts Swamp. The route makes a diagonal to the east where it crosses the City of Seattle's Tolt River Pipeline. This segment crosses Mountain View Road, Kelly Road, Lake Joy Road.

**Segment 6 (MP 21.00 to MP 23.45):** *Forest.* Segment 6 begins where the pipeline route leaves the BPA right-of-way, entering second- and third-growth forest land where clearing of trees will be required. The pipeline route lies within a private road right-of-way through second- and third-growth forest.

**Segment 7 (MP 23.45 to MP 25.20):** *Forest.* Segment 7 leaves the road right-of-way and would require new right-of-way. This area is currently forest land, but much of it is being converted to residential subdivisions as yet largely undeveloped. This segment crosses Tolt River Road NE.

**Segment 8 (MP 25.20 to MP 25.90):** *Forest.* Segment 8 lies within a private road right-of-way through clearcuts and young forest.

**Segment 9 - (MP 25.90 to MP 26.8):** *Forest.* At Segment 9, the pipeline route rejoins the BPA right-of-way through clearcut forest areas.

**Segment 10 (MP 26.8 to MP 27.15):** *Forest.* Segment 10 remains within the BPA right-of-way, but would require new clearing of forest land where transmission lines run between towers on the north and south sides of Griffin Creek.

**Segment 11 (MP 27.15 to MP 28.05):** *Forest.* Segment 11 lies within BPA right-of-way and crosses forest land.

**Segment 12 (MP 28.05 to MP 31.7):** *Forest.* Segment 12 joins a private logging road and extends south to a ridge above Tokul Creek (Tokul Creek Rd.). Land use in this segment is forest land with a few rural residences.

**Segment 13 (MP 31.7 to MP 32.1):** *Forest and Rural Residential.* Segment 13 leaves the Tokul Creek Road and descends to and crosses Tokul Creek and ends at the intersection of 53rd and 396th.

**Segment 14 (MP 32.1 to MP 33.7):** *Rural Residential and Industrial.* Segment 14 follows county roads around the east side of the Weyerhaeuser lumber mill. There are a few rural residences in this area.

**Segment 15 (MP 33.7 to MP 41.05):** *Recreation, Urban Suburban and Rural Residential, and Commercial.* This segment has the greatest diversity in land use of any of the segments. It also passes through the cities of Snoqualmie and North Bend as unincorporated areas of King County. Over the entire segment the proposed route will be constructed within the Cedar Falls Trail, managed by King County.

The proposed route crosses through the Mount Si Golf Course in the City of Snoqualmie and then crosses into the City of North Bend. Land uses in this area are commercial and urban. The proposed route passes by the North bend Elementary School in North Bend and then into an area of rural residential at approximately MP 36. As the proposed route progresses easterly, it crosses to the south under I-90 into a suburban area before leaving the trail and ending at MP 39.7.

A pump station would be constructed at MP 35.9 on land that is currently vacant with grassy vegetation.

**Segment 16 (MP 41.05 to MP 42.5):** *Forest and Rural Residential.* Segment 16 begins where the proposed route departs from the Cedar Falls Trail and follows Edgewick Road and private roads through rural residential area. The area is forested and most homes are screened by trees. There is a private fish hatchery and some recreational/retreat facilities in the general area. Twin Falls State Park is north of the

proposed route at MP 41.

**Segment 17 (MP 42.5 to MP 43.9): *Forest and Recreation.*** Segment 17 is the first of several segments in which it is proposed that the pipeline be constructed within the railbed of the former Milwaukee-St. Paul Railroad grade, now operated by Washington State Parks as part of an extensive rail-trail system. The right-of-way is also used by other commercial users such as AT&T. Land use is recreation (hikers, bicyclists, and horseback riders), while adjacent land use is primarily forest and other recreational uses (Olallie State Park is east of this segment and Twin Falls State Park is to the northwest).

**Segment 18 (MP 43.9 to MP 45.9): *Forest and Recreation.*** The proposed pipeline leaves the JWT and traverses a short distance through a forested area to a paved county road. This segment passes through Olallie State Park.

**Segment 19 (MP 45.9 to MP 48.9): *Forest and Recreation.*** This segment initially traverses a forested area before rejoining the JWT. The majority of the route in this segment is on the trail, with forest areas on adjacent sides.

**Segment 20 (MP 48.9 to MP 50.7): *Forest and Recreation.*** Although land uses generally remain the same, the emphasis changes from recreation to forest. Segment 20 leaves the JWT and traverses a forested area via an old logging road to intersect with Tinkham Road.

**Segment 21 (MP 50.7 to MP 54.9): *Forest and Recreation.*** Segment 21 lies within Tinkham Road, a gravel Forest Service road where little clearing is anticipated for the pipeline. Land uses are forest and recreation. Recreation use is more related to vehicular access and camping than the hiking, bicycling, and horseback riding use of the JWT. Tinkham Road is heavily used by recreational travelers seeking access to trailheads and campgrounds. Tinkham Campground, a Forest Service campground, is located about 1/4 mile north of the pipeline route on the north side of the Snoqualmie River. Bandera Landing Strip, an emergency air strip maintained by the Forest Service, is located on the north side of the Snoqualmie River east of the Tinkham Campground. Segment 21 leaves Tinkham Road before it reaches the parking lot for the Asahel Curtis Interpretive Trail and the Annette Lake trailhead (north of Humpback Creek). Both trails are heavily used during most of the year.

**Segment 22 (MP 54.9 to MP 56.2): *Forest and Recreation.*** Segment 22 begins near the Tinkham Road overpass Exit 47, I-90) and crosses Humpback Creek in the BPA right-of-way under aerial transmission wires. This segment would require some clearing.

**Segment 23 (MP 56.2 to MP 56.7): *Forest and Recreation.*** Segment 23 leaves the BPA right-of-way and rejoins the JWT.

**Segment 24 (MP 56.7 to MP 59.0): *Forest and Recreation.*** Segment 24 consists of the part of the route

which runs through the Snoqualmie Tunnel. Approximately 1/4 mile east of where the tunnel begins, the Pacific Crest National Scenic Trail crosses north/south over the top of this tunnel and Ski Acres and Pacific West ski areas are located north and south of the tunnel. The route crosses the King/Kittitas County boundary, which also forms the boundary between the Mt. Baker-Snoqualmie National Forest and the Wenatchee National Forest.

#### Kittitas County

**Segment 25 (MP 59.0 to MP 73.35):** *Forest and Recreation.* Segment 25 begins at Hyak, where the Snoqualmie Tunnel ends. This follows the JWT along the shore of Lake Keechelus, traversing checkerboard lands in the Wenatchee National Forest which alternate ownerships between the U.S. and private timber companies.

**Segment 26 (MP 73.35 to MP 75.8):** *Forest and Recreation.* Segment 26 leaves the JWT, joins Monahan Road for a short distance, then runs cross-country through an area of clearcut forest south of Easton State Park where there is no existing right-of-way. Some clearing would be required along this segment.

**Segment 27 (MP 75.8 to MP 98.9):** *Forest and Agriculture (dry land farming, rangeland).* Segment 27 joins a Puget Power right-of-way southwest of the town of Easton, then the Puget Power corridor joins with a 4-line BPA transmission corridor. The route drops south of the right-of-way for about 1-1/2 miles then returns to the northern limit of the right-of-way and turns straight east. Lake Easton State Park lies within a mile of the route. Forest land predominates south of the pipeline route and farmland predominates to the north. Once the route crosses the Yakima River, land use changes to rangeland. Road crossings include Little Creek Road, Woods & Steele Road, South Cle Elum Ridge Road, Graham Road, Alice Road, and Markovic Road.

**Segment 28 (MP 98.9 to MP 100.40):** *Rangeland.* This segment is within the BPA right-of-way and crosses Swauk Creek.

**Segment 29 (MP 100.40 to MP 107.7):** *Agricultural (rangeland).* In Segment 29 the route passes to the northeast of the town of Thorpe. This segment crosses Highway 97.

**Segment 30 (MP 107.7 to MP 149.4):** *Agricultural (rangeland, irrigated farmland).* Segment 30 runs through alternating grazing land and irrigated farmland. The route briefly intersects the JWT at the Kittitas Highway. It parallels the JWT through the town of Kittitas, turning south near the eastern boundary of the town to enter the Kittitas Terminal site. This area is currently changing land use from rural residential/agricultural to commercial as the City of Kittitas expands services closer to I-90. In this commercial area, a proposed storage and distribution station (Kittitas Terminal) would be located southeast of the town. Continuing east through grazing land, the route crosses the Highline Canal and continues on



the north side of I-90 onto Ginkgo State Park Land. The route crosses under I-90 near MP 143.4 and continues southeasterly on State Park land parallel to an existing roadway. The segment ends west of the Wanapum Dam.

**Columbia River Crossing Alternatives:** At Milepost 147.3, the pipeline will cross the Columbia River. The proposed crossing is by way of a horizontal directional drill (HDD) approximately 3,000 feet downstream of Wanapum Dam.

Nine alternative crossing methods/locations were initially considered. Five of these alternatives, including the proposed crossing location and HDD method, were selected for further study based on constructability and cost. The four alternatives to the proposed method under consideration are as follows:

1. Crossing on the I-90 Bridge
2. Crossing on the Beverly Railroad Bridge
3. Crossing on the Wanapum Dam
4. Dredging north of I-90 Bridge

The pipeline routing for the proposed location and method and the four Columbia River crossing alternatives are shown on Figure 2.1-2.

The proposed method is to do a horizontal directional drill under the Columbia River south of Wanapum Dam. The pipeline crossing location (SEC20 T16N R23E) was selected because it would be a narrow crossing of the river, and the slopes on either side of the river would provide better constructability for the pipeline than the steeper slopes to the north.

If the route utilizing the I-90 Bridge to cross the Columbia River were selected, the pipeline would be routed towards the river on the north side of I-90 in eastern Kittitas County. At a point near the Vantage/I-90 interchange (NE SEC30 T17N R23E) the pipeline would be routed onto the I-90 right-of-way, and cross over the Columbia River on the I-90 bridge. On the eastern side of the river, the pipeline would then be routed to the south along SR26 for approximately 1 mile to a point near the SR26/SR243 junction (SW SEC28 T17N R23E). At this point the pipeline would be routed to the southeast and would rejoin the original alignment at a point (SE SEC13 T16N R23E) approximately 4 miles east of Wanapum Dam, at the location of the Beverly-Burke Pump Station as described in the EFSEC Application. OPL has initiated discussions with the Washington State Department of Transportation (WSDOT). As of the date of this application, WSDOT has not made a decision either in favor or in opposition to installing the pipeline on the bridge.

Under the Beverly Railroad Bridge alternative, the pipeline would be routed to a point (SW SEC33 T16N R23E) near the western end of the railroad trestle. The pipeline would then cross over the Columbia River on the trestle to the eastern side of the river near the community of Beverly. The pipeline would then be

routed to the northeast following Beverly Cutoff Road for approximately 2.5 miles where it would rejoin the original alignment as described in the EFSEC Application at a point (NE SEC22 T16N R23E) approximately 2 miles east of Wanapum Dam. Use of the train trestle would eliminate the need to trench or directionally drill across the Columbia River. However, crossing on the trestle would increase the total distance of the pipeline route, and the pipeline would be exposed for a significant distance. Discussions with Burlington Northern and Washington State Parks have identified a potential reactivation of the bridge by the railroad which would reduce the desirability of using it for the pipeline.

A third alternative would be to place the pipeline along the upper portion of the Wanapum Dam. A permit application has been made to Grant County Public Utility District (PUD) to request approval for this option.

The least preferred alternative would be to trench across the Columbia River north of the I-90 bridge. Under this alternative, the pipeline would be routed to the western edge of the river at the terminus of old Highway 10 (SE SEC18 T17N R23E) approximately 1 mile north of the I-90 bridge on the Columbia River. The roadbed at this location gradually slopes into the Columbia River and is used occasionally as an informal boat ramp. The pipeline would cross the river using a "wet trench" method. This construction technique is described in Section 2.14 Construction Methodology of the EFSEC Application. On the eastern side of the river, the pipeline would be routed to the southeast approximately 1 mile to the I-90/SR26 interchange (SW SEC21 T17N R23E). At this point the pipeline would be routed to the south along SR26 for approximately 1 mile to a point near the SR26/SR243 junction (SW SEC28 T17N R23E). From here the pipeline would be routed to the southeast and would rejoin the original alignment at a point (SE SEC13 T16N R23E) approximately 4 miles east of Wanapum Dam, at the location of the Beverly-Burke Pump Station as described in the EFSEC Application. The old highway 10 terminus location north of the I-90 bridge is suitable for a wet trench crossing.

Land uses in the vicinity of the proposed location and the four Columbia River crossing alternatives are primarily recreational and rangeland related. In addition, there is the Wanapum Dam, an industrial use; and the small communities of Vantage near the I-90 bridge, Beverly near the Beverly Railroad Bridge, and Wanapum Village about 1.5 miles southeast of the dam. On the western side of the river under crossing alternatives 1 and 5, the pipeline would be routed around the recreation and freeway service oriented community of Vantage. On the eastern side of the river under crossing alternatives 1 and 5, the pipeline would be routed through an undeveloped, rangeland area, before rejoining the original alignment at the location of the Beverly-Burke Pump Station as described in the EFSEC Application. Under crossing alternative 2, the pipeline would be routed from the undeveloped rangeland area on the west side of the river across to the rural area west of the community of Beverly, and then through the undeveloped, rangeland area north of Beverly before rejoining the original alignment. The HDD alternative routes the pipeline eastward, north of the community of Wanapum Village, into the rangeland/agricultural area east of the dam.

**Segment 31 (MP 149.4 to MP 150):** *Columbia River and Rangeland.* Segment 31 consists of the crossing of the Columbia River. At the halfway point in the river crossing, the segment enters Grant County.

#### Grant County, Adams County, and Franklin County

**Segment 32 (MP 150 to 151.8):** *Rangeland.* Segment 32 begins on the east side of the Columbia River and crosses rangelands to intersect with the Beverly Burke Road on the eastern plateau overlooking the Columbia River.

**Segment 33 (MP 151.8 to MP 221.15):** *Agriculture (irrigated farmland, grazing).* Segment 33 begins on the east side of the Columbia River where the pipeline route joins and runs parallel to Beverly Burke Road and then parallel to Highway 26 to approximately MP 180.5. The route traverses irrigated agricultural and grazing land. A portion of the route would cross the Columbia Natural Wildlife Refuge. The segment ends on the south side of Esquatzel Coulee, where the route enters a BPA transmission line right-of-way.

**Segment 34 (MP 221.15 to MP 227.5):** *Agriculture.* Segment 34 begins south of Esquatzel Coulee and joins the BPA transmission line right-of-way at a southeastern diagonal. The segment ends where the route leaves the right-of-way. Road crossings in this segment include U.S. Highway 395.

**Segment 35 (MP 227.5 to MP 231.04):** *Agriculture, Urban Industrial.* Segment 35 begins where the route leaves the BPA right-of-way and traverses agricultural and industrial land to the route termination at the Northwest Terminal Company tank farm east of the Pasco City Limit. Road crossings in this segment include Pasco-Kahlotus Road and U.S. Highway 12.

#### **Kittitas Terminal and Pump Stations**

In addition to the pipeline, the proposed project would include a terminal located south of the town of Kittitas and 6 pump stations along the pipeline route. The pump stations will be located in Segments 1 (Thrasher, 3.67 acres), 15 (North Bend, 1.0 acres), 26 (Stampede, 2.0 acres), 33 (Kittitas, 27 acres), and 33 (Beverly-Burke, 2.0 acres, and Othello, 2.0 acres) (see Figure 2.1-1). All of these sites are vacant of buildings or other permanent structures.

The Kittitas Terminal will occupy approximately 27 acres south of the town of Kittitas, north of Interstate 90 (I-90), and east of No. 81 Road. The land is currently used for irrigated agriculture.

The Thrasher Station will be located within existing cleared BPA right-of-way and less than an acre will require clearing for the pump station. Surrounding land use is rural residential.

The North Bend Station will be located in a vacant grassland area near a Puget Power substation and adjacent to the Cedar Falls Trail right-of-way. Surrounding land use is changing from rural residential to suburban.

The Stampede Station will be located in a meadow area adjacent to the Wenatchee National Forest south of Lake Keechelus. Surrounding land uses are forest and recreation. No clearing of trees will be required for the pump station.

The Kittitas Pump Station will be located at the Kittitas Terminal on land which is currently used for irrigated agriculture.

The Beverly-Burke Station will be located in an area of rangeland not currently cultivated. Some clearing of brush will be required for construction of the pump station.

The Othello Station will be located in an agricultural area. No clearing will be required.

#### **5.1.1.2 Impacts to Existing Land Uses**

Impacts on adjacent land uses will occur during construction of the pipeline and associated facilities, including pump stations and the Kittitas truck terminal. Construction impacts will be short-term and temporary. Pipeline operational impacts will occur as a result of maintenance activities within the pipeline right-of-way and at pump station locations. These operational impacts will be periodic and of short duration. Operational impacts of the Kittitas truck terminal and pump stations along the pipeline route will be long-term. These impacts are discussed below.

#### **Construction Impacts**

Construction of the pipeline will occur simultaneously in three construction spreads along the pipeline corridor.

Spread 1 is divided into two sections. The western section begins at the Thrasher Station and ends at the second crossing of the Snoqualmie River, a distance of approximately 32 miles. The second section commences east of Snoqualmie Pass on the south side of Cabin Creek and ends at the Kittitas Terminal. The total length of this spread is approximately 79 miles.

Spread 2 includes river crossings and the mountainous area over Snoqualmie Pass. The spread begins at the second Snoqualmie River crossing and ends at Cabin Creek. This spread is approximately 40 miles in length. Also included in this spread are crossings of the Snoqualmie River, Tolt River, Yakima River, and Columbia River.

Spread 3 begins at the Kittitas Terminal and extends across eastern Washington approximately 106 miles to the eastern project terminus at Pasco.

The construction right-of-way width in mainline sections will be 60'. Construction within the right-of-way will include removal of vegetation; excavation of the trench and storage of trench spoils; delivery and stringing of pipe; welding; application of protective coating; lowering of pipe into trench; backfilling and final grading.

In special sections of the corridor where the pipeline will be constructed on trails, park roads or through residential areas, the right-of-way will be reduced to 30 to 35' in width. In this narrower right-of-way, the ditch will be graded to provide equipment access to the ditch. The pipe will be strung and welded over the ditch, rather than parallel to the ditch in the right-of-way.

Crossings of roads, railroads, streams, and rivers require additional equipment set-up areas on each side of the crossing. The dimensions of these areas are as follows:

- |                               |   |
|-------------------------------|---|
| • Road and railroad crossings | 60' x 200'  |
| • Open cut stream crossings   | 60' x 100'  |
| • Drilled crossings           | 100' x 250' (drilling) and 200' by<br>length of crossing (exit) |
| • Bored canals                | 50' x 20'   |

During construction along the portions of the pipeline corridor which pass through Urban and Rural segments, and where the pipeline passes near recreational sites, adjacent land uses may be affected by noise, dust, and construction related traffic. Construction of the pipeline will not require the removal or relocation of buildings or other permanent structures.

Depending upon the size of a nearby resident's land, the duration of pipeline construction adjacent to any given land ownership is expected to average about five weeks. Activities will begin with land clearing. The construction process is typically trenching, pipe stringing, welding, pipe laying, hydrostatic testing, radiographic testing, backfilling, mulching and reseeding. Other activities, such as blasting, boring, directional drilling, bridge and culvert work will occur in specific locations and may take longer.

The amount of land clearing which is necessary depends upon the type and amount of existing vegetation. On the portions of the corridor which will use existing right-of-way, the vegetation is typically maintained to low-level brush and ground cover, and clearing for the pipeline would not require tree removal. It is the intent of the applicant to stay entirely within the cleared portions of existing rights-of-way wherever feasible while meeting setback requirements from utility poles. Standard setbacks are 50 feet from steel poles and 25 feet from wooden poles. Exceptions are granted on a case by case basis. In some forest segments, the power lines span the right-of-way at sufficient height that right-of-way maintenance below

the lines has not occurred. In these cases, tree clearing will be required.

Clearing of right-of-way will occur prior to other construction activities and there may be a short period after clearing is completed during which no construction activity will occur. Other construction activities, beginning with ditching, will occur sequentially and crews for Spread 1 and Spread 3 will move from west to east. Spread 2 will employ multiple work teams which will move to specific work sites such as river crossings and narrow, sensitive rights-of-way.

Construction impacts are expected to be restricted to noise, dust, and additional traffic. Further discussion of these impacts and measures that will be taken to mitigate them can be found in the following sections: Dust, Section 3.2.4; Noise, Section 4.1.1.2; and Traffic, Section 5.2.1.2.

Although short-term and temporary, pipeline construction activities will affect the use of recreational facilities in the corridor area and may have the indirect impact of increasing the usage of other recreational areas by diverting users. This impact will be greatest where construction activities interfere or conflict directly with a recreational facility, such as the John Wayne Trail.

Several construction features will be incorporated into the project design to minimize impacts to recreational land uses adjacent to the pipeline corridor. Along the John Wayne Trail and park roads, a narrow right-of-way will be used. To accomplish a narrower right-of-way, the ditch will be graded to provide direct equipment access into the ditch and the pipe will be strung and welded directly over the ditch. Public access and use of the trails and parks will be maintained on as near a full-time basis as is possible.

In areas where the pipeline does not use existing corridors, pipeline construction will result in tree clearing, temporary loss of agricultural land, and temporary disruption of the rural character of the area. After completion of construction, impacts on adjacent land use will be minor. However, maintenance activities along the pipeline corridor may give local residents the feeling of intensified land use.

Under the Columbia River crossing alternatives, land use impacts will be similar from each alternative. Land use impacts in eastern Kittitas County, on the Columbia River, and in western Grant County will primarily be restricted to the construction phase of the project, and will include noise and dust intrusions, traffic detours, and temporary recreation restrictions. Under the dredged crossing alternative, recreational use of the river in the vicinity of the active construction zone will also be temporarily restricted. On the east side of the river, pipeline construction under any of the five crossing alternatives is expected to proceed rapidly through the undeveloped area, and any negative effect of construction will be short-term.

Placement of the new pipeline corridor within an existing utility corridor is considered to be an efficient use of the land. Although technically this will be a land use intensification, the uses are compatible, and long-term impacts are restricted to a narrow area.

## **Operational Impacts**

Operational impacts of the project on existing land uses will be limited to those impacts resulting from activities at the Kittitas Terminal and from noise generated by pump stations along the pipeline route. A more detailed discussion of noise impacts is included in Section 4.1.1.

Noise generators at the Kittitas Terminal include operation of pumps and truck loading activities. The 26-acre site is presently used for agriculture. A gasoline service station and truck stop are located west of the terminal site. The nearest residence is 1,900' northwest of the proposed terminal facility. A group of residences are located approximately 1/2 mile east of the proposed terminal and 800' north of I-90.

Traffic on I-90 is the dominant noise generator in the area of the proposed terminal and as a result, noise standards are currently exceeded at some locations.

Noise increases at the gas service station will be high because of its proximity to the terminal. However, noise levels at this receptor site are already heavily influenced by automobile and truck traffic entering the service station, and additional noise impacts from the terminal are considered insignificant.

The operation of the terminal will increase noise levels at the residential use northwest of the site. This receptor is already heavily affected by I-90, therefore the nighttime noise impacts of the proposed terminal to this receptor are considered moderate.

In addition to a pump station at the Kittitas Terminal, there will be five pump stations along the pipeline route. Noise impacts to adjacent land uses will depend upon the distance between the pumps and the noise receptor. Of the five pump stations, three will be well beyond the distance from sensitive uses needed to meet or exceed noise standards. The Thrasher Station at the western terminus of the project and the North Bend Station will be enclosed to reduce impacts to adjacent land uses. The Stampede Station will also be enclosed to reduce impacts to recreational uses in the area.

## **Mitigation Measures**

The following mitigation measures will be implemented to minimize project-related impacts on existing land uses.

### Construction

- Construction generally will be limited to daytime hours.
- All construction equipment will operate with standard muffler systems.
- Construction areas will be watered as needed to prevent fugitive dust spreading to adjacent

- land uses.
- Construction on narrow rights-of-way and at or near recreational trails and sites will be continuously controlled to ensure, to the greatest degree feasible, safe and continuous access to recreation areas.

### Operation

- A vegetative buffer zone will be placed along the boundaries of the Kittitas Terminal to reduce noise impacts to nearby receptors.
- Pump stations will be placed adequate distances from potential noise receptors, or enclosed, to ensure that noise levels remain low.

### **5.1.1.3 Relationship to Existing Land Use Plans**

#### **Introduction**

Federal and state agencies typically make land use decisions pursuant to adopted land use policies and/or regulations. Land use policies may be contained in agency plans or management manuals, and regulations are codified into law, e.g., the Code of Federal Regulations (CFR) at the federal level, and the Washington Administrative Code (WAC) at the state level. At the county and city levels in Washington, agency land use decisions are usually made based on comprehensive plans, zoning ordinances, and Shoreline Management Master Programs. In general, comprehensive plans contain the official policy guidelines for decisions regarding the future development of a county or a city. Zoning ordinances are regulatory documents which designate land areas as specific land use zones, specify uses that are permitted within each zone, and generally implement the goals and policies contained in comprehensive plans. Shoreline Management Master Programs contain specific policy guidelines governing land use activities in designated shoreline areas, pursuant to the Washington State Shorelines Management Act of 1971.

For the discussion on land use plans below, the study area included a 10-mile radius around the Kittitas Terminal site and a 2-mile-wide corridor centered on the pipeline, with a focus on jurisdictions actually crossed by the 60' wide construction corridor. For cities and counties within this study area, the relevant comprehensive plan, zoning ordinance, and Shoreline Management Master Program, are identified and addressed in relation to this project. For lands in the study area having federal and state jurisdiction, the relevant land use plan, manual, or code is identified and addressed in relation to this project.

Figures in Appendix A illustrate the existing zoning in the study area.

As required by WAC 463-42-362(1) (c) and (d), OPL has provided EFSEC with copies of adopted land use plans and zoning ordinances for jurisdictions within a 2-mile-wide corridor centered on the pipeline, and within a 10-mile radius of the Kittitas Terminal site. These plans are:



Snohomish County

Snohomish County General Policy Plan  
Snohomish County Zoning Code, Title 18  
Snohomish County Shoreline Management Master Program

King County

King County Comprehensive Plan  
King County Zoning Code, Title 21A  
King County Shoreline Management Master Program

Kittitas County

Kittitas County Comprehensive Plan  
Kittitas County Zoning Code, Title 17  
Shoreline Master Program for Kittitas County

Grant County

Grant County Zoning Ordinance  
Shorelines Master Program for Grant County

Adams County

Adams County Zoning Ordinance  
Adams County Shorelines Management Master Program

Franklin County

Franklin County Comprehensive Plan  
Franklin County Zoning Ordinance #18-80  
Franklin County Shoreline Management Master Program

City of Snoqualmie

Snoqualmie Vicinity Comprehensive Plan  
Snoqualmie Zoning Code  
City of Snoqualmie Shoreline Management Master Program

City of North Bend

North Bend Comprehensive Plan  
North Bend Comprehensive Zoning Title 18  
North Bend Shoreline Master Program

City of Kittitas

## City of Kittitas Zoning Code

### City of Ellensburg<sup>1</sup>

Ellensburg Comprehensive Plan

Ellensburg Zoning Ordinance

### City of Pasco

City of Pasco Comprehensive Plan

City of Pasco Zoning Ordinance

## Discussion

Table 5.1-1 summarizes the relationship of the Cross Cascade Pipeline Project with local zoning ordinances and shoreline master programs. More complete discussions of comprehensive plans, zoning ordinances, and shoreline master programs for cities and counties crossed by the proposed pipeline route are included below.

**TABLE 5.1-1  
LAND USE SUMMARY**

	<b>Zones</b>	<b>Permitted Use</b>	<b>No Zoning Code Provision</b>	<b>Consistent</b>	<b>Prohibited</b>
Snohomish	Suburban Agriculture	—			
	Rural Conservation	—			
	General Commercial	—			
	Agriculture-10	—			
	Forestry	—			
	Planned Residential	—			
	Shoreline Master Program	—			
King	Rural 2.5	—			
	Rural 5	—			
	Rural 10	—			
	Agricultural	—			
	Industrial	—			
	Mining	—			
	Forest	—			
	Regional Business	—			
	Shoreline Master Program	—			

<sup>1</sup> None of the Cross Cascade Pipeline Project facilities are proposed to be located within the Ellensburg city limits. This Section therefore contains no further discussion of City of Ellensburg land use plans. However, since the City of Ellensburg is located within the 10-mile radius of the Kittitas Terminal site, copies of the city's land use plans are included with this application in compliance with WAC 463-42-362(1).  
Revised May 1, 1998

**TABLE 5.1-1 (CONTINUED)**  
**LAND USE SUMMARY**

	<b>Zones</b>	<b>Permitted Use</b>	<b>No Zoning Code Provision</b>	<b>Consistent</b>	<b>Prohibited</b>
Kittitas	Commercial Forest		—		
	Forest and Range		—		
	Rural-3		—		
	Agriculture -3		—		
	Agriculture-20		—		
	Suburban II		—		
	Shoreline Master Program	—			
Grant	Open Space Rec.		—		
	Agriculture	—	—		
	Light Industrial		—		
	Heavy Industrial		—		
	Shoreline Master Program	— †			
Adams	Agriculture	—			
	Shoreline Master Program	—			
Franklin	Agricultural Production	—			
	Light Industrial	—			
	General Commercial	—			
	Residential Mobile Home	—			
	Shoreline Master Program	— †			
City of Snoqualmie	Parks & Open	— †			
	Shoreline Master Program	— ♦			
City of North Bend	Manufacturing Park	— †			
	General	—			
	Single Family - 7000	— †			
	Single Family - 9600	— †			
	Shoreline Master Program	— †			
City of Kittitas	Highway Commercial			—	
City of Pasco	Heavy Industrial	— *			
	Light Industrial			—	

† A petroleum products pipeline is permitted subject to conditional use criteria.

♦ The waterway at issue is not subject to Shoreline Management Act.

\* All uses not otherwise prohibited are permitted.

## Snohomish County

**Snohomish County General Policy Plan:** The proposed pipeline route crosses a total of eight different land use designations under the Snohomish County General Policy Plan. Land Use designations crossed by the proposed pipeline route include the following: Urban Low Density Residential (4-6 DU (dwelling units) /Acre), Medium Density Rural Residential-2.3 (1 DU/2.3+ Acres), Urban Reserve, Maltby Employment Area, Riverway Agriculture, Low Density Rural Residential (1 DU/20 Acres), Commercial Forest - Forest Transition Area, and Commercial Forest. The proposed Thrasher Station site is located in an area designated as Medium Density Rural Residential-2.3.

Under the General Policy Plan, Urban Residential designations "encompass residential lands within the unincorporated UGA [Urban Growth Area] and are intended to provide for urban housing opportunities," while Rural Residential designations "encompass residential land outside of UGAs and are intended to provide rural housing opportunities while preserving the rural character of these lands." Specifically, lands within the Urban Low Density Residential designation may be developed at a density of four to six dwelling units per acre; Medium Density Rural Residential-2.3 designation lands may be developed at a density of one dwelling unit per 2.3 acres; and Low Density Rural Residential designation lands may be developed at a density of one dwelling unit per 20 acres.

The Maltby Employment Area (MEA) is a special designation under the General Policy Plan limited to the State Route 9/State Route 522/Maltby area. This area was previously designated for industrial use under the North Creek Area Comprehensive Plan and the Cathcart-Maltby-Clearview Area Comprehensive Plan. These subarea comprehensive plans preceded the current General Policy Plan. The MEA designation reflects Snohomish County's commitment to industrial and commercial development within the designated area, similar to that previously planned under the former subarea comprehensive plans. This area also has an Urban Reserve overlay designation, with the recognition that further study will occur for future inclusion in an Urban Growth Area.

The General Policy Plan describes lands having an Agriculture designation as those "primarily devoted to the commercial production of horticultural, viticultural, floricultural, dairy, apiary, vegetable, fruit, or animal products." The Riverway Agriculture designation specifically denotes "farmland areas generally characterized by being in a river valley, floodplain or shoreline area, having continuous prime farmland soils, and having approximately fifty percent or more of the land area in parcels of forty acres and larger."

Lands with Forest designations include state and private forest lands. The Commercial Forest designation includes "primarily large forest land tracts that may not be subdivided for residential development. These lands may be segregated only into tracts of eighty acres or larger." The Forest Transition Area (FTA) designation is an overlay to the Commercial Forest designation. The FTA "consists of a 1/4 mile wide band of Commercial Forest land on the edge of the Commercial Forest Land designation bordering non-

resource lands. The use of FTA lands is the same as Commercial Forest lands unless adjacent land uses prevent normal forest practices, in which case limited low density development options also apply."

The Snohomish County General Policy Plan does not contain specific policies on the siting of refined petroleum products pipelines or pump stations. However, under the Utilities Element of the Plan, there are general guidelines on the siting of private utility systems which may be applicable to the project. Of specific note is Objective UT 5.A, which states "Utilize existing transportation and utility corridors to accommodate necessary transmission system expansions." Also applicable to the project is UT Policy 5.D.3, which states "The county shall ensure that private utilities are located in compliance with the Shoreline Management Master Program." As discussed below, the siting of the pipeline would be in compliance with the county Shoreline Management Master Program. In addition, most of the proposed pipeline construction in Snohomish County would occur within existing utility and transportation corridors. The project would therefore be consistent with the referenced private utility siting guidelines of the General Policy Plan.

The Snohomish County Comprehensive Plan was adopted on June 25, 1994 by Ordinance No. 94-125. The proposed pipeline route crosses eight different land use designations under the Snohomish County General Policy Plan: Urban Low Density Residential; Medium Density Rural Residential-2.3; Urban Reserve; Maltby Employment Area; Riverway Agriculture; Low Density Rural Residential; Commercial Forest-Forest Transition Area; and Commercial Forest. The pipeline would also cross through the North Creek, Cathcart-Maltby-Clearview, and Skykomish Valley Area Comprehensive Plan areas. The Thrasher Pump Station would be located in an areas designated Medium Density Rural Residential-2.3.

The Snohomish County General Policy Plan also includes a specific utilities element under which there are general guidelines and policies regarding the siting of private utility systems. Under Objective UT 5.A, proposed utilities shall "Utilize existing transportation and utility corridors to accommodate necessary transmission system expansion." The pipeline would be located primarily within the existing Bonneville Power Administrative transmission line corridor or along existing roadways, and would therefore meet this criteria.

Under UT 5.D.3, "The County shall ensure that private utilities are located in compliance with the Shoreline Management Master Program." The pipeline would cross the Snoqualmie River, which is designated as a Rural Environment under the Snohomish County Shoreline Management Master Program. The Snohomish County Council adopted the current Snohomish County Shoreline Master Program as Ordinance No. 88-075. In the Rural Environment designation, utilities including petroleum pipelines are a permitted use subject to the policies and regulations of the Snohomish County Shoreline Management Master Program. Section F of the Master Program identifies Shoreline Use Activities. The Utilities section begins on page F-65, and provides general regulations for the installation of utilities facilities. Item 2 under REGULATIONS - General states "Utility transmission lines shall be underground (underwater)

wherever practical and where not significantly detrimental to the environment." Item 7 requires that "such facilities shall minimize crossing of water bodies, 8 and 10 under Underground Utility Lines describe further construction methodology for river crossings. The pipeline will be entirely underground and the proposed crossing methodology of the Snoqualmie River is by use of the recently constructed County bridge. The pipeline would be placed within a utilidor under the bridge. The proposed river crossing would be consistent with the criteria listed in this section.

The pipeline route has been placed to avoid wetland crossings wherever feasible or where no practical alternative exists. This would be also be consistent with the Shoreline Master Program provisions.

**Snohomish County Zoning Code, Title 18:** The proposed pipeline corridor crosses lands having six different land use zoning designations under the Snohomish County Zoning Code. Land use zones crossed by the pipeline route include the following: Suburban Agriculture - 1 Acre (SA-1), Rural Conservation (RC), General Commercial (GC), Agriculture - 10 Acre (A-10), and Forestry (F). A portion of the route also crosses land with a base zoning of SA-1. The proposed Thrasher Station site is located in an area zoned as Suburban Agriculture - 1 Acre under the county zoning code.

The county zoning code describes the intent of the Suburban Agriculture - 1 Acre zoning designation as the preservation of "the rural character of areas which have a definite residential potential. Large lot areas and open space will be required to maintain the rural character." The minimum lot size in the SA-1 zone is one acre.

The Rural Conservation zoning designation is applied to those areas of the county with "less than prime agricultural soils." These areas are determined to be unsuitable for intensive development mainly due to their relative isolation, lack of public utilities and/or services, steep slopes, or other natural conditions. The code requires large lot areas in this zone with the intent of "preserving a rural lifestyle as well as for the protection and enhancement of deltas, wetlands, steep gradients, aquifers, watersheds, shorelines and other natural features of major significance." The minimum lot size in the RC zone is 2.3 acres.

The zoning code describes the intent and function of the General Commercial zone as the provision of areas to accommodate "a wide variety of nonretail commercial and business uses which are primarily related to automotive rather than pedestrian buying."

The primary intent of the Agriculture - 10 Acre zoning designation is the preservation of "those portions of the county which contain prime agricultural soils for agricultural purposes. Since those portions of the county which contain the proper combination of soil and topographic characteristics for intense agricultural development are limited and irreplaceable, the primary function of this zone will be to establish the proper area standards and permitted uses which will encourage the use and preservation of this land for agricultural purposes." The minimum lot size in the A-10 zone is ten acres.

The intent and function of the Forestry zone is "to conserve and protect commercial forest lands for long-term forestry and related uses." Commercial forest lands with the F classification are often large tracts with a single ownership interest. Many of these tracts are located in remote areas away from residential and intense recreational areas.

The proposed petroleum pipeline is defined in the Snohomish County use matrix (SCC 18.32.040) as a Utility Facility-Transmission pipeline and is a permitted use in all county zoning categories. The proposed Thrasher pump station is defined in the zoning use matrix as a Utility Facility-All Other Structures and it would require a conditional use permit in all residential, rural and resource zones, but would be a permitted use in most commercial and industrial zones.<sup>2</sup>

Construction and operation of petroleum products pipelines and pump stations is permitted outright in the SA-1, RC, GC, A-10, F, and PRD overlay zones under the Snohomish County Zoning Code.

**Snohomish County Shoreline Management Master Program:** The pipeline corridor crosses several waterways in Snohomish County. One of these waterways, the Snoqualmie River, is subject to the Washington State Shoreline Management Act of 1971 (SMA). The Snoqualmie River shoreline is designated a Shoreline of Statewide Significance (see SMA discussion above). Development along this shoreline is guided by the policies of the Snohomish County Shoreline Management Master Program (SMMP). The region of the Snoqualmie River crossed by the pipeline route is designated by the SMMP as Rural Environment. The pipeline will cross the river within the utility box on the existing County-owned bridge. The Snohomish County SMMP objective in designating a Rural Environment is "to protect agricultural land from urban expansion, restrict intensive development along undeveloped shorelines, function as a buffer between urban areas, and maintain open spaces and opportunities for recreational and other uses compatible with agricultural activities." In the Rural Environment SMMP shoreline designation, utilities, such as petroleum pipelines, are listed as a permitted use subject to SMMP policies and regulations.

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<sup>2</sup> See statement of Snohomish County before the State of Washington Energy Facility Site Evaluation Council for Initial Public Hearing of March 13, 1996, page 8.

## King County

**King County Comprehensive Plan:** The King County Comprehensive Plan was adopted by the King County Council on November 18, 1994. It is currently being revised for compliance with the Growth Management Act. The proposed pipeline route crosses five different land use designations under the King County Comprehensive Plan: Rural Residential; Forestry; Mining; Rural Cities Urban Growth Area; and King County Owned Open Space/Recreation. The proposed North Bend Pump station is located in an area designated Rural Residential. The King County Comprehensive Plan does not contain specific policies on the siting of petroleum products pipelines or pump stations. However there are two chapters, Chapter Eight Facilities and Services and Chapter Twelve Energy and Telecommunications which on the surface would appear to be relevant to the siting of the project. Chapter Eight Facilities and Services does not address public utilities, other than those services for sewer, water, wastewater and stormwater provided by King County.

Chapter 12 Energy and Telecommunications lists a variety of energy and telecommunication providers that currently service King County. The existing Olympic petroleum products pipeline is not listed, although it traverses King County parallel to Interstate 5 and serves facilities within the county, including Sea-Tac Airport. Under 12.II Electric Utilities, there is a subsection B. Utility Corridor Designation. Policy ET-202 states:

King County and the utilities should identify and preserve corridors to accommodate future electric power transmission and distribution lines. Corridor designation should include:

- a. Identification of appropriate shared uses;
- b. Recognition of County roads as utility corridors; and
- c. Evaluation of proposed facility plans on a system-wide basis, rather than project-by-project.

Approximately 40 miles of King County will be crossed by the proposed pipeline. The pipeline route has been selected to utilize existing rights-of-way including the Bonneville Power Administrative transmission corridor, county roads, Forest Service roads, and the Cedar Falls Trail. All of the route except approximately 1.8 miles will utilize existing cleared rights-of-way, and the 1.8 mile corridor will connect two existing rights-of-way. The proposed pipeline project would be consistent with this policy.

Under III. Natural Gas, there is only one policy, Policy ET-301:

King County should work to remove barriers to the availability and efficient use of natural gas.

This policy is not relevant to siting of petroleum products pipelines.



**King County Zoning Code, Title 21A:** The King County Zoning Code is codified as Title 21A of the King County Code. The proposed pipeline route crosses eight zones under the King County Zoning Code: Rural-Area-2.5; Rural Area-5; Rural Area-10; Agriculture; Mining; Forestry; Industrial; and Regional Business. The proposed North Bend Pump Station Site is located in a Rural Area-120 zone.

Under the county zoning code, the main purpose for the Rural Area zoning designations is "to provide for an area-wide long-term rural character and to minimize land use conflicts with nearby agricultural, forest or mineral extraction production districts." The primary intent behind the Urban Reserve zoning designation is "to phase growth and demand for urban services, and to reserve large tracts of land for possible future growth in portions of King County designated by the Comprehensive Plan for future urban growth while allowing reasonable interim uses of property..."

The code describes the purpose of the Industrial zoning designation as providing for "the location and grouping of industrial enterprises and activities involving manufacturing, assembly, fabrication, processing, bulk handling and storage, research facilities, warehousing and heavy trucking." The purpose of the Mining (or Mineral) zone is "to provide for continued extraction and processing of mineral and soil resources in an environmentally responsible manner..." The purpose behind the Forest zoning designation is "to preserve the forest land base; to conserve and protect the long-term productivity of forest lands; and to restrict uses unrelated to or incompatible with forestry."

The zoning code describes the uses allowed in unclassified railroad rights-of-way as "limited to tracks, signals or other operating devices, movement of rolling stock, utility lines and equipment, and facilities accessory to and used directly for the delivery and distribution of services to abutting property."

Construction and operation of petroleum products pipelines and pump stations is permitted outright in these zones (including the "unclassified" zone) under the King County Zoning Code.

King County has determined that the proposed pipeline and pump station would be classified as a "Utility facility". (See letter dated March 14, 1996 to Frederick S. Adair, Chair of the Energy Facility Site Evaluation Council, Greg Kipp, Deputy Director of King County Land Use Services Division of the Department of Development and Environmental Services.) Section 21A.08.060 lists the zones in which a utility facility would be a permitted use. Utility facilities are permitted uses in Agriculture, Mining, Forestry, Industrial, and Regional Business, and conditional uses in the rural zones. Therefore, the siting of proposed pipeline project would be consistent with the King County Zoning Code.

**King County Shoreline Management Master Program:** The King County Shoreline Management Code is codified as Title 25 of the King County Code. Section 25.08.580 defines "Utilities" as follows:

"Utilities" are all lines and facilities related to the distribution, collection, transmission or disposal

of water, storm and sanitary sewer, oil, gas, power or refuse.

The proposed pipeline route crosses numerous waterways in King County. Seven of these waterways are subject to the Shoreline Management Act, RCW 90.58, et seq.: Boxley Creek, Cherry Creek, Griffin Creek, Snoqualmie River, South Fork Snoqualmie River, Tokul Creek and Tolt River. Except for the South Fork of the Snoqualmie River, the regions of these waterways crossed by the pipeline route are all designated as Conservancy Environment. The region of the South Fork of the Snoqualmie River crossed by the pipeline route is designated Rural Environment. In both the Conservancy and Rural Environments, utilities are listed as a permitted use subject to the policies and regulations of the King County Shoreline Management Master Program:

25.20.110 Utilities. Utility facilities may be permitted in the rural environment subject to the utilities requirements (Section 25.16.160) of the urban environment and the general requirements (Section 25.20.030) of this chapter.

25.24.110 Utilities. Utility facilities may be permitted in the conservancy environment subject to the general requirements (Section 25.24.030) of this chapter and the utility provisions (Section 25.16.160) of the urban environment.

### Kittitas County

**Kittitas County Comprehensive Plan:** The existing county comprehensive plan is updated to July, 1996. The overall pipeline project crosses the following land use designations of the comprehensive plan as it travels west to east: Active Recreation, Open Space, Recreational Residential, Commercial Forest, Forest Multiple Use, Rural Residential, Rural Multiple Use, Rural Residential, Rural Multiple Use, Agriculture, Rural Residential and Rural Multiple Use. The site for the proposed Stampede Pump Station is located on land designated as Commercial Forest under the Plan. The distribution site for the proposed Kittitas Terminal (@ Kittitas Interchange on I-90) is located on land designated as Agricultural under the Plan. The project will therefore be reviewed in two phases: the linear pipeline; and, the distribution terminal site.

### **Lineal Pipeline**

Chapter Six of the Kittitas Comprehensive Plan provides for Utilities. The definition of Utilities does not include petroleum product pipelines, although both GPO 6.24 and GPO 6.25 speak to hazardous liquid pipelines:

GPO 6.24      To reduce the risk of accidents caused by hazardous liquid pipelines, natural gas lines, sewer lines and other potential hazardous materials which are conveyed both above and below ground.

GOP 6.25 Kittitas County will address hazardous liquid pipelines, natural gas lines, sewer lines and other potentially hazardous materials through the County's development regulations. The development regulations shall include the specific addition or restriction of these and associated uses as well as the possible adoption of performance standards for siting, maintenance and monitoring. These performance standards should include best management practices.

As of this date, no development regulations have been adopted which include the specific addition or restriction of these uses, nor have performance standards for siting, maintenance and monitoring been adopted.

The sixth paragraph under **6.1(a) Glossary of Terms** states:

Virtually all land uses require one or more of the utilities discussed in this Chapter. Local land use decisions drive the need for new or expanded utility facilities. In other words, utilities follow growth. Expansion of the utility systems is a function of the demand for reliable service that people, their land uses, and activities place on the systems.

The proposed pipeline location travels the following land use designations: Active Recreation, Open Space, Recreational Residential, Commercial Forest, Forest Multiple Use, Rural Residential, Rural Multiple Use, and Agriculture.

#### Policies on Active Recreation, Open Space and Recreation Residential

The Active Recreation, Open Space, and Recreation Residential land use designations were originally part of the Snoqualmie Pass Comprehensive Plan. This land use plan for the Snoqualmie Pass Subarea has been wholly adopted into the Kittitas County Comprehensive Plan. Descriptions of these land use designations are listed below.

#### Active Recreation

Active recreation areas are those where considerable preparation and maintenance are required to provide recreational facilities and where machinery and equipment are used for operation and maintenance. These include alpine ski areas, snow play activity areas, golf courses and sports fields. A variety of associated support uses may be included, such as lodges, clubhouses, restaurants and lounges, equipment sales and repair, instructional facilities, locker rooms, maintenance and storage buildings and administrative offices. Residential development which does not preclude active recreational uses is allowed.

## Open Space

Undisturbed areas and environmentally sensitive areas, such as large wetlands and floodplains, are included in the open space designation. Much of the land in this category is National Forest System Land. Designation as open space is not intended to preclude access, but to encourage conservation while providing controlled or managed access for passive recreational activities like hiking, camping, Nordic skiing and fishing, consistent with national Forest Land and Resource Management Plans. Open space areas are critical to the natural beauty of the Pass area and provision of open space should be a consideration on public and private land in all land use designations.

## Recreation Residential

[The original Snoqualmie Pass Comprehensive Plan did not contain a description of the Recreation Residential land use designation, however the map contained in this subarea plan included areas mapped with this designation. In adopting this subarea plan into the Kittitas County Comprehensive Plan, the areas originally mapped as Recreation Residential kept this designation in the Comprehensive Plan Map. A description of this designation has never been created. The Snoqualmie Pass Comprehensive Plan is currently under review as part of the county's 1997 amendment process to the Comprehensive Plan, and the Recreation Residential issue is a docketed item scheduled for review. A decision on the future of this designation will be made at that time.]

The Snoqualmie Pass Comprehensive Plan does not contain specific policies attached to the land use designations, however it does list several goals and objectives for Residential, Recreational, and Natural Resource land uses within the subarea. Only one objective, Objective 8 under **Residential Land Use** addresses utilities:

8. All utilities in new residential developments should be underground.

The underground pipeline would not be inconsistent with this objective.

## Policies on Commercial Forest and Forest Multiple Use

Under the Comprehensive Plan the main purpose of the Commercial Forest designation is "to focus on the importance of sustaining forest productivity and associated forest values including watershed, wildlife, mining and recreation." The Plan has a similar statement as the main purpose behind the Forest Multiple-Use designation. These two forestry designations also share many of the same specific land use policies, with the Commercial Forest designation generally being more restrictive to non-forest land uses than the Forest Multiple-Use designation. Specific policies pertaining to uses in the Commercial Forest designation are listed below.

## Commercial Forest

GPO 2.130 To conserve forest lands for productive economic use by identifying and designating forest lands where the principal and preferred land use is commercial resource management.

GPO 2.132 The primary land use activities in commercial forest areas are commercial forest management, forest recreation, agriculture, mineral extraction, sand and gravel operations and those uses that maintain and/or enhance the long-term management of designated commercial forest lands. [Similar to Forest Multiple-Use Policy GPO 2.168]

GPO 2.133 To discourage non-forestry development and direct such activities and land uses to areas more suited to those purposes.

GPO 2.134 To encourage multiple use concepts of forest management of the greatest lasting benefit to present and future generations. [Similar to Forest Multiple-Use Policy GPO 2.169]

GPO 2.140 Land use activities within or adjacent to commercial forest land should be sited and designed to minimize conflicts with forest management and other activities on commercial forest lands. [Similar to Forest Multiple-Use Policy GPO 2.172]

The underground pipeline does not appear to be inconsistent with these policies and should not affect the long-term management of commercial forest lands.

The Forest Multiple Use Lands land use designation is similar to Commercial Forest Lands designation. It discusses forestry operations as the predominate use, although now mixed in with a variety of permanent recreational facilities and residential uses. Again, uses such as the pipeline are not noted.

## Forest Multiple Use

GPO 2.173 Encourage clustering residential developments.

GPO 2.174 Development standards for access, lot size and configuration, fires protection, forest protection, water supply, and dwelling unit location should be adopted for development within or adjacent to forest lands.

GPO 2.175 Lot size and density should be determined by provision for water and sewer.

## Policies on Rural Residential and Rural Multiple Use

Under the Comprehensive Plan, the Rural Lands designation category is intended to "delineate areas to which the definition of 'rural' applies, to describe those uses that are compatible with the rural character of such lands and provide for a variety of rural densities". There are two policies pertaining to uses within the Rural Residential designation and are listed below. Uses such as pipelines are not noted.

### Rural Residential

GPO 2.147 Densities should be determined by water and sewage systems provided and by compatibility with existing and projected development in the vicinity. The proximity of fire protection facilities should be considered in addition.

GPO 2.148 Insofar as Rural Residential areas are situated where farming, mining and forestry exists, particular precaution should be taken to minimize the conflict between new residential developments and farm operations. Farming, forestry, and mining cannot be expected to curtail normal operations in the interest of home developments.

These policies do not restrict the allowable land uses within the Rural Residential designation to residential only. The underground pipeline project would therefore not be considered inconsistent with the Rural Residential policies.

Rural Multiple-Use are transitional areas between Rural Residential Land Use, Commercial Forest Land Use and Forest Multiple-Use Lands. The topography, geology and access of the areas will allow for a variety of uses. There are three policies listed, all of which pertain to uses. Uses such as pipelines are not noted.

GPO 2.176 This area should provide for a mix of residential, natural resource industry uses and other small scale related or comparable business or industrial uses.

GPO 2.177 A wide variety of uses should be permitted in this area.

GPO 2.178 Natural resource production and processing should be encouraged to continue and expand in this area.

The Rural Multiple-Use policies are non-restrictive and allow for a variety of land uses. The pipeline project would be considered consistent with these policies.

### Policies on Agricultural Lands

It is the policy of Kittitas County "to encourage and support agricultural uses of lands." The Agricultural policies promote agricultural land uses by ensuring adequate supplies of water, restricting the encroachment of non-agricultural land uses, promoting land development that enhances nearby agricultural activities, opposing legal and regulatory hindrances to agricultural activities, and promoting a sustained agricultural economy. Specific policies pertaining to uses in the Agricultural land use designation are listed below.

#### Agricultural

GPO 2.149 Any policies with regard to development in the agricultural areas should not be interpreted to preclude all further development in these areas. The possibilities and benefits of cluster residential developments located in agricultural land use areas should be retained.

GPO 2.150 Agriculture has priority in matters dealing with conflicting land uses in agricultural areas. Farmlands in Kittitas County are the home sites for thousands of families and provide a very special quality of life for these families.

GPO 2.152 Irrigation delivery facilities shall be managed and maintained to facilitate the unimpeded delivery of waters to agricultural lands in Kittitas County.

GPO 2.161 Encourage non-farmers in agricultural areas to meet farm performance standards.

GPO 2.162 Encourage development projects whose outcome will be the significant conservation of farmlands.

GPO 2.163 Oppose public trail systems in farming areas, and any other public use in currently active utility corridors in agricultural areas and enforce all trespass laws.

Because the pipeline will be located underground, it is not anticipated to take any agricultural land permanently out of production. The pipeline will cross under concrete-lined irrigation delivery systems (drainage canals) by jacking-and-boring and will not interrupt the delivery of irrigation waters. The pipeline right-of-way across agricultural lands is not proposed to be used as a public trail system. All trespass laws will be enforced.

**Analysis:** The proposed underground pipeline use would not be considered inconsistent. Being underground removes the possibility of displacing other priority uses of the land use designation.

There is nothing within the comprehensive plan with which to specifically quote an underground pipeline or similar use to be consistent within these land use designations. Such uses as highways, electrical distribution lines, natural gas lines and the like have been permitted in the past by Kittitas County through these land use designations. Therefore, based on the above review, a finding of consistency could be given.

### **Pump Station at Stampede Pass**

The Stampede Pump Station would be located on land designated as Commercial Forest under the Comprehensive Plan. The site is a partially forested meadow and would require minimal clearing for the pump station. As stated above for the lineal pipeline, there are five policies which pertain to uses in lands designated for Commercial Forest.

#### **Commercial Forest**

GPO 2.130 To conserve forest lands for productive economic use by identifying and designating forest lands where the principal and preferred land use is commercial resource management.

GPO 2.132 The primary land use activities in commercial forest areas are commercial forest management, forest recreation, agriculture, mineral extraction, sand and gravel operations and those uses that maintain and/or enhance the long-term management of designated commercial forest lands.

GPO 2.133 To discourage non-forestry development and direct such activities and land uses to areas more suited to those purposes.

GPO 2.134 To encourage multiple use concepts of forest management of the greatest lasting benefit to present and future generations.

GPO 2.140 Land use activities within or adjacent to commercial forest land should be sited and designed to minimize conflicts with forest management and other activities on commercial forest lands.

A pump station is not noted as a use. The above policies recognize that it is appropriate to take limited amounts of land out of forest production for other uses as reflected by the fact that mineral extraction and sand and gravel operations are allowed.

The pump station has been sited in the proposed location due to the need for system hydraulics. The pump station site has been selected to avoid sites with heavy timber, and to require minimal clearing. The site is located near existing roads to avoid clearing land for access. The pump station has been sited and designed



to minimize conflicts with forest management and other activities. The pump station would be consistent with these policies.

### **Distribution Terminal at Kittitas/I-90 Interchange**

The proposed distribution terminal is located within the Agriculture Land Use designation. Unlike the January, 1994 Comprehensive Plan, the current Comprehensive Plan does not include a policy limiting non-agricultural development of farmlands in Kittitas County to suburban areas already partially subdivided and developed and to areas poorly suited to farming. There is one policy pertaining directly to development in agricultural lands:

GPO 2.149 Any policies with regard to development in the agricultural areas should not be interpreted to preclude all further development in these areas. The possibilities and benefits of cluster residential developments located in agricultural land use areas should be retained.

The site is located adjacent to the City of Kittitas, with new highway commercial developments within the city limits. The use proposed is similar to uses listed in the zoning district Light Industrial:

“17.48.020 Permitted uses.

- A. Wholesale business, storage buildings and warehouses;
- B. Freighting and trucking yard or terminal;”

There is no use listed in the existing AG-20 (CAOZ) zoning district for any like or similar use. A successful rezone from the existing AG-20 (CAOZ) zoning district to an industrial zoning district possibly would require first a change in comprehensive plan designation to the Industrial Land Use designation. However land currently zoned as agricultural within urban growth areas is anticipated to be used for future urban development, which would require a rezone from Agricultural to a more intensive use. It can be reasonably argued that the designation of land as within an Urban Growth Area or Urban Growth Node replaces the need to change the underlying Comprehensive Plan designation.

The County's comprehensive plan contains a section on industrial uses such as a wholesale distribution terminal. The majority of the lands designated Industrial Land Use are located to the west and southwest of the City of Ellensburg. There are no areas designated by the County as Industrial Land Use within the City of Kittitas region.

There are two policies contained in the County comprehensive plan regarding Industrial Land Use:

GPO 2.108 Location of Industrial Lands There should be sufficient industrial land in the county located in areas convenient to utilities, fire protection and to major transportation facilities (air, rail, freeway). Industrial developments may be permitted beyond urban growth areas.

GPO 2.109. Compatibility Industry located adjacent to residential areas or along scenic routes should be situated so as to minimize effects on those areas and should provide screening and other measures to achieve compatibility.

Major Industrial Developments: Development of major industrial developments are permissible within Kittitas County. A Major Industrial Development is a master planned location for a specific manufacturing, industrial, or commercial business. The proposed delivery facility would not be considered a "Major Industrial Development."

The proposed location directly proximate to an interstate interchange appears to be consistent with Policy GPO 2.108 ("Location of Industrial Land"). However, this site is not currently designated as Industrial Land Use.

The siting of the proposed distribution center at Kittitas would have a large impact on the surrounding visual landscape. The existing municipal water tower at Kittitas would be a good example of how the tanks might appear within the surrounding region's view. Therefore, site screening of some sort would be necessary if the event of a comprehensive plan amendment to an industrial land use. However, it is not known if any type of site screening would be sufficient to meet this policy regarding compatibility. Overall, a thorough review and discussion of environmental impacts to the community are not known at this point in the application process.

**Analysis:** Overall, the proposed distribution center is not consistent with existing Comprehensive Plan policies and land use designations. There are two options that were considered which would provide consistency for the Kittitas Terminal: (1) a proposed zoning code text amendment which would allow "Associated Facilities" in any zone subject to conditional use criteria; and (2) an annexation of the proposed site into the City of Kittitas. The distribution terminal will be requiring and impacting city facilities and services; the city should be the controlling jurisdiction in these circumstances. An annexation request was made to the City of Kittitas, and approved by the City, and subsequently denied by the Boundary Review Board.

At the time of the applicant's request for annexation, the area was within the designated Urban Growth Area for the City of Kittitas. After the submittal and approval by the City of Kittitas, Kittitas County revised the Urban Growth Area to move the boundary back to the existing city limits. The annexation request was denied by the Boundary Review Board. One of several reasons for the denial was the proposed site being located outside of the Urban Growth Area. Subsequent to this decision by the Boundary Review

Board, the action taken by Kittitas County has been voided based on inadequate notice, and a settlement agreement reached to return to the Urban Growth Area boundary shown in the July 1996 Comprehensive Plan. The City of Kittitas is limited from resubmitting the annexation request for one year.

The City of Kittitas adopted a Comprehensive Plan in fall of 1997, with mapped land use designations for both the city and areas within its Urban Growth Area (UGA). The Kittitas Terminal site is located within the UGA in an area designated for "general industrial" use. Kittitas County is expected to adopt the Kittitas UGA and amend their zoning code to General Industrial which would allow Special Utilities (pipelines) and Associated Facilities (terminal) as a conditional use. OPL has requested that Kittitas County rezone the Kittitas Terminal site to "general industrial" to permit the siting of the facility.

In summary, the underground pipeline and Stampede Pump Station components of this project would be considered consistent with the land use and utility policies of the Kittitas County Comprehensive Plan. The Kittitas Terminal component of this project would be considered consistent with the utility policies but inconsistent with the Agricultural land use policies of the Comprehensive Plan. If the Zoning Code is amended by Kittitas County to allow Special Utilities and Associated Facilities by conditional use in all zones, the Agricultural land use policies would likely not apply to the Kittitas Terminal as it would be an Associated Facility (to a Special Utility) by definition and would be permissible as a conditional use.

**Kittitas County Zoning Code, Title 17:** The proposed Cross Cascade Pipeline route crosses lands having 6 different zoning designations under the Kittitas County Zoning Code. These zoning designations are as follows: Commercial Forest, Forest and Range, Rural-3, Agricultural-3, Agricultural-20, and Suburban-II. Petroleum Pipeline is not listed as either a permitted or conditional use in the Kittitas County Zoning Code.

The Commercial Forest Zone provided the following conditional use: KCC 17.57.030 F; "The erection, construction, or substantial alteration of private, public, and semi-public gas, electric, water or telecommunication and utility facilities, including but not limited to fire stations, utility substations, pump stations, wells, hydroelectric generating facilities, and transmission lines and facilities".

The pipeline could be considered as either a utility facility or as a transmission line. It would therefore be allowed as a conditional use in a Commercial Forest Zone.

The proposed Stampede Pump Station site is located within a Commercial Forest Zone. The proposed Stampede Pump Station would be considered as a "utility substation" and would be permitted as a conditional use in the Commercial Forest Zone.

The proposed Kittitas Terminal site is located within an Agriculture-20 Zone. The terminal would be considered as a Petroleum Trucking Terminal (wholesale distribution). This use is not listed as a permitted or conditional use in the Kittitas County Zoning Code. However, the Highway Commercial Zone permits

“[g]as service stations including truck stop operations” (See KCC 17.44.020 G). The Light Industrial Zone permits “[f]reighting and trucking yard or terminal” (See KCC 17.48.020 B). The Kittitas Terminal could be considered as a trucking terminal.

It should be noted that petitions for requesting a change on the zoning map (commonly known as “rezones”) are subject to the following review criteria:

“KCC Chapter 17.98.020 (C):

1. The proposed amendment is compatible with the comprehensive plan;
2. The proposed amendment bears a substantial relation to the public health, safety or welfare;
3. The proposed amendment has merit and value for Kittitas County or a sub-area of the County;
4. The proposed amendment is appropriate because of changed circumstances or because of a need for additional property in the proposed zone or because the proposed zone is appropriate for reasonable development of the subject property;
5. The subject property is suitable for development in general conformance with zoning standards for the proposed zone;
6. The proposed amendment will not be materially detrimental to the use of properties in the immediate vicinity of the subject property; and
7. The proposed changes in use of the subject property shall not adversely impact irrigation water deliveries to other properties.”

**Analysis:** The county zoning code does not explicitly address utility corridors. In such cases, a determination may be made that the proposed use is simply not regulated by county zoning regulations, as with existing utilities and corridors such as electrical transmission lines, domestic utility transmission lines, and railroads. Under such circumstances, the zoning administrator's (Planning Director) decision would be mailed with a description of the proposal to property owners adjoining the development. Any aggrieved party may appeal the administrator's determination to the Kittitas County Board of Adjustment within twenty days of the date of the decision (See KCC 17.96.070-080).

**Pipeline:** It may be reasonably argued that the Commercial Forest Zone allows the proposed pipeline as a conditional use, despite the fact that this Section does not explicitly list petroleum products pipelines as a utility facility (See KCC 17.57.030 F above).

Given the scope of this project, a code text amendment appeared necessary in order to bring the pipeline component of the project into compliance with current zoning regulations. Such an amendment was requested by the applicant on March 11, 1996. Alternative language has been prepared by the Planning

Department staff and the language is under consideration by the Planning Commission for a recommendation to the Board of County Commissioners (BOCC). If approved by the BOCC, "special utilities" (including but not limited to the transmission of "electricity, water, sewer, storm drainage, gas, petroleum, radio, television, telephone") would be allowed as a conditional use in all zones.

**Stampede Pass Pump Station:** The Commercial Forest Zone allows the construction of utility facilities as a conditional use. The Stampede Pass Pump Station would be considered as a utility facility and would appear to be consistent with the Zoning Code.

**Kittitas Terminal:** The Agricultural-20 Zone does not permit the proposed Kittitas Terminal facility. Furthermore, as stated above the purpose and intent of the Agricultural-20 Zone is to provide an area "wherein farming, ranching and rural lifestyles are dominant characteristics. The intent of this zoning classification is to preserve fertile farmland from encroachment by nonagricultural land uses; and protect the rights and traditions of those engaged in agriculture."

As noted above, the Highway Commercial (C-H) and Light Industrial (I-L) Zones do provide for "gas service stations including truck stop operations" and "freighting and trucking yard" respectively. A rezone to I-L would bring the proposed facility into compliance with local zoning regulations, as the proposed development could be reasonably construed as a trucking terminal.

The terminal would be considered an "Associated Facility" to a "Special Utility" under the proposed text amendment currently being considered by Kittitas County. Associated Facilities could be permitted as a conditional use in industrial zones. OPL has requested a rezone from the County to change the zoning to industrial to be consistent with the comprehensive plan designation made by the city of Kittitas. If the land is subsequently rezoned to industrial, the terminal could be permitted as a conditional use.

In summary, the Stampede Pump Station would be consistent with the current Kittitas County Zoning Code. However, the other two components of the project, the pipeline and the Kittitas Terminal cannot be made consistent or in compliance with the current Kittitas County Zoning Code until the County adopts the pending text amendment.

**Shoreline Master Program for Kittitas County:** The proposed pipeline will cross or pass through eight State Shorelines (regulated by the Shoreline Management Act of 1971 per WAC 173-18-230). Development along these shorelines is guided by the policies of the Shoreline Master Program for Kittitas County (SMP). State shorelines crossed by the pipeline route included the following:

Shoreline	Location	SMP Shoreline Environment Designation
Lake Keechelus	T22N R11E - T21N R11E	Conservancy
Cabin Creek	T20N R13E Sec. 09	Conservancy

Big Creek	T20N R14E Sec. 29	Conservancy
Little Creek	T20N R13E Sec. 33	Conservancy
Yakima River	T19N R16E Sec. 11	Conservancy (west bank)/Rural (east bank)
Swauk Creek	T19N R17E Sec. 17	Rural
Naneum Creek	T18N R19E Sec 28	Rural
Columbia River	T16N R23E Sec. 20	Conservancy

Under the SMP, Conservancy Environment is "characterized by land uses which are primarily related to natural resource use. Management objectives are oriented toward maximizing sustained yield natural resource utilization, recreation and low intensity recreational homes while restricting development in hazardous areas." The SMP describes Rural Environment as "characterized primarily by agricultural activities. The management objectives are to protect agricultural land, maintain open space, and allow for recreational uses compatible with agricultural production."

## Section 19

Section 19 of the SMP states that "all construction shall be designed to protect the adjacent shoreline lands against erosion, uncontrolled drainage, slides, pollution, excessive excavations and fills and other factors detrimental to the environment, and shoreline development shall not substantially, diminish the natural quality or near natural quality of the water involved". Additionally, "upon completion of installation of any substantial development which disrupts the environment, the disturbed area shall be regraded to compatibility with the natural terrain and replanted to provide an attractive vegetation cover which is harmonious with the surrounding area and the project requirements".

**Analysis:** The project proponent has committed to apply Best Management Practices (BMPs) from the Department of Ecology's Stormwater Management Manual for the Puget Sound Basin. BMPs include a suite of construction methodologies and practices designed to protect water resources through the prevention of erosion, excessive stormwater runoff, and water quality degradation. BMPs will be incorporated into all stages of pipeline construction in the vicinity of water bodies along the proposed route, including the eight State Shorelines crossed within Kittitas County. BMPs will be adjusted, with EFSEC oversight, to reflect the different physiographic conditions experienced along the pipeline route. The proponent has also committed itself to minimize vegetation clearing during construction near water bodies, and to restore shoreline areas by regrading and replanting disturbed areas with native, non-invasive plant species.

## Section 37

Section 37 of the SMP defines "Utilities" as "services which produce and carry such things as electric power, sewage, communications, and fuels", and states in part that "utility services in shoreline areas

designated as Natural and Conservancy Environments shall be permitted subject to the following regulations:

- (a) Those utilities required to service uses permitted in a Natural and Conservancy Environment shall be permitted.
- (b) Those utilities which unavoidably must cross a body of water or pass through the Environment shall be permitted".

According to the SMP, utilities in Rural Environment designations are to be "placed underground wherever feasible" and are also subject to provision (b) as just mentioned.

Additionally, "where such utility systems cross shoreline areas, clearing necessary for installation or maintenance shall be kept to the minimum necessary to prevent interference by trees and other vegetation with the proposed facilities. Upon completion of installation of any underground or overhead system or of any maintenance project which disrupts the environment, the disturbed area shall be regraded to compatibility with the natural terrain and replanted to prevent erosion and provide an attractive vegetation cover which is harmonious with the surrounding area and the project requirements."

**Analysis:** Because the pipeline would cross through Kittitas County from its western border to its eastern border, crossing of water bodies is unavoidable. Therefore the pipeline is permissible in a Natural and Conservancy Environment.

The pipeline is planned to be underground and would therefore be permitted in a Rural Environment.

The clearing in wetland and shoreline areas will be the minimum necessary to permit construction. Route selection was directed toward avoiding wetland areas to the extent possible. The final alignment will further avoid wetland areas wherever possible.

Where wetland areas are crossed as a part of pipeline construction, special construction techniques will be used to minimize impacts. These wetland construction methods will include the following special procedures:

### **Access, Staging, and Ancillary Areas**

- The only access roads, other than the construction right of way, which will be used in wetlands are those existing roads that can be used with little or no modification and no impact on the wetland.
- All construction equipment will be refueled at least 100' from water bodies or wetland boundaries.
- All equipment will be cleaned and inspected prior to entering a wetland. Equipment leaking oil or other fluids will not be allowed to enter a wetland.

### **Spoil Pile Placement and Control**

- The upper 6 to 12" of topsoil will be removed and protected throughout construction. This material may be stockpiled in adjacent upland areas.
- All spoil material from water body crossings must be placed in the right of way at least 10' away from the ordinary high water line. At a minimum, all spoil shall be contained within sediment filter devices.
- The materials removed from the trench below the topsoil level may also be stockpiled in adjacent upland areas. However, it will not be placed on top of, or mixed with, the topsoil material previously removed.

### **General Construction Procedures**

- All activities within the wetland will be kept to the minimum disturbance area possible.
- In wetlands and riparian areas, vegetation that must be removed will be cut at ground level, leaving existing root systems intact. The pulling of tree stumps and grading activities will be limited to those that would directly interfere with trenching, pipe installation and backfill.
- Trench plugs will be used as necessary to prevent diversion of water into upland portions of the pipeline trench.



- Grading will not take place within the boundaries of any wetland, and disturbance will be kept to the minimum necessary to safely construct the pipeline.
- Pipe sufficient to cross the wetland will be welded on the right-of-way and inspected by radiography before being carried or pulled into the wetland and lowered into the trench. In long wetland stretches, it may be more feasible to weld up several joints of pipe, carry them into the trench leaving one end at the welding location, weld on additional lengths, pull them into the trench, and repeat this process until the entire wetland length has been crossed.
- If standing water or saturated soils are present, low ground weight construction equipment will be used, or construction will be done using prefabricated equipment mats.
- In the event that matting is necessary, all construction activities will be carried out from the matting. Equipment will not be allowed in the wetland off the mats, at any time. The mats will be inspected prior to placing in the wetland and mats with foreign material will not be used.
- Once the pipe has been laid in the trench, the subsoil will be replaced, followed by the topsoil. Excess material will be spread on the right-of-way outside the wetland boundaries.

The construction methods will be in compliance with the SMP.

#### Grant County

**Grant County Comprehensive Plan:** The current Grant County Comprehensive Plan was adopted August 3, 1977. The proposed pipeline appears to be consistent with the Comprehensive Plan relative to Utilities and Energy.

The Comprehensive Plan stipulates the following:

#### ***Energy/Utility Transportation Facilities***

##### ***Goals***

- 1) *To allow the necessary high voltage (250 kV and above) electrical and high pressure gas and oil transmission lines to cross the county; yet protect the environment, the health and welfare of the citizens and the rights of property owners.*
- 2) *To establish guidelines for routing said lines across the county in a manner to minimize the adverse environmental and long term economic impacts.*

### ***Guidelines***

- 1) *When building new high voltage electrical and high pressure gas and oil transmission lines and to the extent technically and economically feasible, the routing shall be:*
  - a) *On land which is publicly owned; and/or*
  - b) *On land which is of marginal agricultural use; and/or*
  - c) *Along existing right-of-way and property lines and property borders.*

The proposed pipeline route follows along existing right-of-way and property borders for the majority of the route within Grant County. The pipeline enters Grant County along the western county boundary at the Columbia River near Wanapum Dam. The corridor is adjacent to Beverly Burke Road and 16th S.W. Road, following along section lines until it crosses into Section 14, T16N, R24E, where it is routed to the northeast to minimize wetlands impacts. The route then follows along the section line, turning to the east at Section 13, T16N, R24E. It follows the section line to the east, skirting around an existing farmhouse, and then moving in a northeasterly direction to cross the Royal Branch Canal twice. The corridor is then located adjacent to 14th S.W. Road for two sections, is moved a small distance to the north to avoid wetlands located on the section line, and then is located adjacent to the railroad, 13th S.W. Road, and Highway 26, and C S.E. Road until it crosses Lower Crab Creek in Section 03, T15N, R27E. The route continues parallel to and adjacent to Highway 26 until it enters Adams County.

The routing of the pipeline would meet Guideline 1 c) and would be consistent with the Comprehensive Plan.

The County Wide Planning Policies contain two policies that are applicable to the siting of the proposed refined petroleum pipeline: Policy 3 - Policies for Siting Public Facilities of a County-Wide or State-Wide Nature, and Policy 7 - Policy for County-Wide Economic Development and Employment.

Policy 3 contains language on the siting of "essential public facilities". These are described as facilities that benefit the public but are typically difficult to site, such as airports, state education facilities, state/regional transportation facilities, solid waste handling facilities, etc. For the purposes of this analysis, the proposed pipeline and the associated Beverly-Burke Pump Station are considered as similar to an essential public facility. According to the county-wide planning policies, in choosing a site for an essential public facility the following issues shall be considered (See Policy 3 Section III):

### ***POLICY 3***

#### ***POLICIES FOR SITING PUBLIC FACILITIES OF A COUNTY-WIDE OR STATE-WIDE NATURE***

*III. Siting Considerations: In siting of essential facilities the Advisory Project Analysis and Site Evaluation Committee shall consider at least the following:*

*A. Essential public facilities shall be developed in a timely, orderly, and efficient arrangement and be so located so as to not adversely affect the safety, health or welfare of the citizens residing around or near the facility.*

*B. Essential public facilities sited near public water and sewer services shall be required to utilize such services.*

*C. Essential public facilities sited where public water and sewer services are not immediately available shall be required to be constructed so as to be able to be serviced by public water and sewer services when they are available and, further, the essential public services shall be required to connect to such water and sewer services when they are available.*

*D. Land adjacent to existing and proposed essential public facilities which may be developed in the future shall be compatible with such uses.*

*E. Proposed essential public facilities shall be compatible with existing land uses.*

*F. Adequate fire protection water supplies shall be required in all developing areas where essential public facilities may be sited.*

*G. Undesignated landfills, dredging, waste discharges, and other activities with potential deleterious environmental impacts shall be controlled with appropriate rules and regulations adopted and enforced by the jurisdiction with authority.*

*H. Essential public facilities shall not locate in resource lands or critical areas if incompatible.*

*I. Essential public facilities shall not be located outside of UGA's unless they are self-contained and do not require the extension of urban governmental services.*

Several of these issues are pertinent to the project and have been addressed by the project proponent in this EFSEC Application. The proposed pipeline routing has been designed to avoid cultivated agricultural fields, wetlands, and other sensitive areas wherever practicable. The pipeline itself will be buried and lands disturbed during the construction phase will be restored and recontoured. During operation, the pipeline and the associated Beverly-Burke Pump Station will both be self-supporting and will not require the

extension of public utilities or services from neighboring jurisdictions. The project proponent has committed to develop contingency plans with local emergency service providers for coordination of response activities in the event of an incident.

Policy 7 contains language on county-wide economic development:

### ***POLICY 7***

#### ***POLICY FOR COUNTY-WIDE ECONOMIC DEVELOPMENT AND EMPLOYMENT***

- 1. To encourage, strengthen, sustain, and diversify the County's economic base.*
- 2. Encourage Grant County's economic base instituting plans to promote employment opportunity.*
- 3. Encourage a diversity of economic development.*
- 4. Direct commercial activity towards existing and proposed regional and local transportation.*
- 5. Emphasize recreational and tourism as an alternate source of revenue, and economic impact for Grant County and its municipalities.*

This project would strengthen and diversify economic development in Grant County by increasing the availability and reliability of the supply of petroleum products. This project is consistent with the county-wide planning policies as adopted by the Grant County Planned Growth Committee.

**Grant County Zoning Ordinance:** The proposed pipeline route, as described in the Map Atlas, Appendix A of the EFSEC Application, crosses lands having four different zoning designations under the Grant County Zoning Ordinance. These zoning designations are as follows: Open Space Recreation, Agriculture, Light Industrial, and Heavy Industrial. There are two additional zones that would be crossed between milepost 145 and milepost 149, dependent upon which of the Columbia River crossing alternatives is selected: Public Facilities and Suburban 2. The proposed Beverly-Burke pump station site is located in an area zoned as Agriculture.

In the Grant County Zoning Ordinance, prohibited uses are those uses not specifically enumerated as permitted uses.

#### **O-SR (Open Space Recreation) - Adjacent to the Columbia River**

A portion of the proposed route near the Columbia River is zoned "O-SR". Pipelines and private or public

utilities are not an enumerated permitted use in the "O-SR" Zone. Under the current "O-SR" zone ordinance, pipelines are a prohibited use because it is a use not specifically enumerated as a permitted use. Allowance of a pipeline in the O-SR zone will require a text amendment addressing the allowance of a pipeline as a permitted or conditional use.

### **P-F (Public Facilities) - Adjacent the Columbia River**

Depending upon the selected Columbia River crossing alternative, the pipeline may cross through lands zoned "P-F". Pipelines and private or public utilities are not an enumerated permitted use in the "P-F" Zone. Under the current "P-F" zone ordinance, pipelines are a prohibited use because the use is not specifically enumerated as a permitted use. Allowance of a pipeline in the P-F zone will require a text amendment addressing the allowance of a pipeline as a permitted or conditional use.

### **S-2 (Suburban 2) - Near the Columbia River**

Depending upon the selected Columbia River crossing alternative, the pipeline may cross through lands zoned "S-2". The "S-2" zone is a land use classification suitable for residential use on land parcels one (1) acre to three (3) acres in size for a one (1) to four (4) family dwelling. Uses are limited to residential uses, and uses associated with the support of residential use. The zone does permit *Buildings and land uses necessary for government or public utility functions*. A public utility function is defined as "*Means those functions relating to publicly operated utilities, including, but not limited to water, electric, and sewage system.*" The proposed pipeline would not meet the definition of a public utility function unless this definition were amended to address utilities in general.

Pipelines and private utilities are not an enumerated permitted use in the "S-2" Zone. Under the current "S-2" zone ordinance, pipelines are a prohibited use because it is a use not specifically enumerated as a permitted use. Allowance of a pipeline in the S-2 zone will require a text amendment addressing the allowance of a pipeline as a permitted or conditional use.

### **Agriculture**

The majority of the project in Grant County will pass through lands which are zoned "Agriculture". The Agriculture Zone statement of Purpose stipulates that, "*the Agriculture zone is a land use classification that is generally suited to crop agriculture, agriculture related industries, livestock and public utility functions. Commercial or industrial activities not directly related to agriculture are prohibited.*"

Under *B. USES PERMITTED*, is item 4:

4. *Building and land uses necessary for government or public utility functions.*

A *public utility function* is defined as "*Means those functions relating to publicly operated utilities, including, but not limited to water, electric, and sewage system.*" The proposed pipeline and pump station would not meet the definition of a public utility function unless this definition were amended to address utilities in general.

Under *D. CONDITIONAL USES BY SPECIAL PERMIT*, is item 10.

10. *Commercial and Industrial or Agriculturally Related Uses.*

*Conditional Standards:*

- (a) *Lot area required: No limitation*
- (b) *The use shall not create a public nuisance affecting a considerable number of people by reason of dust, smoke, odor, noise or traffic.*
- (c) *The operation shall provide services or goods integral to the agricultural community.*
- (d) *Uses shall not have an adverse affect on existing agricultural operations. This shall be demonstrated by notification by the applicant to the property owners within 1,000 feet of the property on which the Conditional Use shall be located.*

The project would not create a public nuisance. The pipeline is intended to improve the fuel supply (gasoline and diesel) to central and eastern Washington. The use of fuel for farm equipment is integral to the agricultural community. The pipeline corridor route avoids adverse affects on existing agricultural operations through its location at the edge of fields, and crossing outside of irrigation circles and orchards, and through the construction timing to minimize impacts to crops. The pipeline could be considered under these conditional use provisions, and would be consistent with the agricultural zoning.

### **Light Industrial and Heavy Industrial Zoning (near Royal City - Hiawatha Industrial Park)**

A pipeline and/or public or private utility are not an enumerated permitted or conditional use in either the Light Industrial or Heavy Industrial Zone. The Light and Heavy Industrial Zone Ordinances are silent in regard to pipelines. Under the current Light and Heavy Industrial Zone Ordinances, pipelines would be a prohibited use because it is not listed as a permitted use. Allowance of a pipeline in the Light and Heavy Industrial zones will require a text amendment addressing the allowance of a pipeline as a permitted or conditional use.

## Analysis

Under each of the above zoning designations, the county zoning ordinance lists the uses that are permitted in that zone. Petroleum products pipelines and pump stations are not specifically identified as permitted uses in any of the subject zones. Section III of the ordinance defines prohibited uses as "Those uses not specifically enumerated as permitted uses." By this definition, the proposed pipeline is a prohibited use in all zones crossed by the corridor, except Agriculture, unless a text amendment is adopted addressing the allowance of a pipeline as a permitted or conditional use.

The majority of the land crossed by the pipeline is zoned Agriculture, and the pump station would be located in an Agriculture Zone. The pipeline and the pump station could be considered under the conditional use provisions of the Agriculture Zone, and would be consistent with those provisions as a conditional use.

**Shorelines Master Program for Grant County:** The pipeline corridor will traverse thirteen (13) rivers, streams and wetland areas within Grant County.

### Columbia River

The proposed pipeline route crosses the Columbia River at the western Grant County boundary. The Columbia River shoreline is a state shoreline regulated by the Shoreline Management Act of 1971 per WAC 173-18-230. Development along this shoreline is guided by the policies of the Shorelines Master Program for Grant County (SMP).

The project includes five possible routing alternatives for crossing the Columbia River. The region of this shoreline crossed by the pipeline route under any of the five crossing alternatives is designated by the SMP as "Rural Environment". Under the Grant County SMP, a "Rural Environment" designation is "intended to protect agricultural land from urban expansion, restrict intensive development along undeveloped shorelines, function as a buffer between suburban areas, and maintain open spaces and opportunities for recreational uses compatible with agricultural activities."

Section 9.00 of the SMP describes utilities as "services which produce and carry electric power, gas, water, steam, sewage, communications and oil." Private utilities may be allowed as a Conditional Use permit in the "Rural" shoreline environment under the Grant County Shoreline Management Master Plan.

The SMP contains the following policies which regulate the siting of utilities in designated shoreline areas:

*9.01 After maintenance/installation operations, shorelines should be restored to pre-project configuration and replanted with native species when desirable.*

*9.02 Whenever these facilities must be placed in a shoreline area, the location should be chosen so as to not obstruct or destroy scenic views. Whenever feasible, these utilities should be placed underground.*

The following policy is specific to siting utilities in the Rural Environment designation:

*9.04 Conditional Use: Structures and land uses necessary for utility and irrigation functions will be judged independently, based on their compatibility with surrounding land and water uses and the areas' capability to support such and activity.*

Shoreline Conditional Use Permit approval must demonstrate the following:

- (a) The use will meet such performance standards that make the use compatible with other permitted uses within the area.*
- (b) The use will cause no unreasonable adverse effects on the environment or other uses.*
- (c) The use will not interfere with the public use of public shorelines.*
- (d) Design of the site will be compatible with the surroundings and the Master Plan.*

The project proponent has committed to minimize vegetation clearing during construction near water bodies, and to restore shoreline areas by regrading and replanting disturbed areas with native, non-invasive plant species. Pipeline routing under any of the five Columbia River crossing alternatives will not obstruct or destroy scenic views. Two of these crossing alternatives route the pipeline underground, and the remaining three cross the river on existing bridges or Wanapum Dam.

The proposed pipeline will not interfere with other permitted uses within the area, nor will it interfere with the public use of public shorelines. The pipeline will be buried underground, and the design will be compatible with the surroundings. The project is designed to prevent unreasonable adverse effects on the environment, however final determination cannot be made until completion of the Environmental Impact Statement.

The location of the pipeline in a rural environment is permitted as a conditional use, and would be consistent pending a finding in the EIS of no unreasonable adverse effects on the environment.

Lower Crab Creek



Lower Crab Creek is designated as a "Conservancy" shoreline environment. Private utilities may be allowed as a Conditional Use permit in the "Conservancy" shoreline environment under the Grant County Shoreline Management Master Plan. The conditional use regulations are listed above.

The project proponent has committed to minimize vegetation clearing during construction near water bodies, and to restore shoreline areas by regrading and replanting disturbed areas with native, non-invasive plant species. The proposed pipeline will not interfere with other permitted uses within the area, nor will it interfere with the public use of public shorelines. The pipeline will be buried underground, and the design will be compatible with the surroundings. The project is designed to prevent unreasonable adverse effects on the environment, however final determination cannot be made until completion of the Environmental Impact Statement.

The location of the pipeline in a conservancy environment is permitted as a conditional use, and would be consistent pending a finding in the EIS of no unreasonable adverse effects on the environment.

#### Adams County

**Adams County Comprehensive Plan:** The Adams County Comprehensive Plan dates from 1966 and is currently outdated. The county is preparing a new subarea plan for the southwestern "panhandle" of the county. This region is the only area within Adams County presently experiencing development pressures. The new subarea plan is expected to be completed and adopted in early 1998. At an undetermined future date, a new county-wide comprehensive plan will be completed. This applicant is subject to only those local regulations in existence at the time of the application. Thus a new comprehensive plan will have no bearing on this proposal.

In the interim, the Adams County Zoning Ordinance is the primary tool used in land use decision making (pers. comm., Caputo, 1997). The county zoning ordinance is discussed below.

**Adams County Zoning Ordinance:** All the Adams County land crossed by the proposed pipeline route, as described in the Map Atlas, Appendix A of the EFSEC Application, including the proposed Othello pump station site, is zoned Agriculture. Under the Adams County Zoning Ordinance, areas with an Agriculture zoning designation are primarily for the cultivation of land for crop production, the raising or grazing of livestock or poultry, or other specified agricultural uses. Some residential and outdoor recreational uses may also be permitted.

The pipeline project would be subject to the existing zoning law if it were under the purview of Adams County. Petroleum products pipelines and pump stations are not specifically identified as a permitted use in the Adams County Zoning Ordinance. ACC 17.04.690 Uses prohibited, states,

*Prohibited uses in specific zones are those uses not specifically enumerated as permitted*

*uses. Prohibited uses are listed in this title for purposes of clarity and emphasis only. Prohibited uses are not limited to the enumerated prohibited uses.*

However, other locations in the county have been utilized previously for the construction and operation of pipelines within the Agriculture zone.

Two options were identified to obtain zoning compliance:

- (1) Request a rezone of the Agricultural zoning to another land use designation such as Manufacturing, ACC 17.48.010(A) which allows the freighting or warehousing and storage of industrial fuels, as well as commercial activities of all kinds except as specifically prohibited or as restricted by conditional use standards. A pipeline could be considered as a commercial activity, and pipelines are not listed as a prohibited use in ACC 17.48.020, and therefore could be considered as a permitted use in a manufacturing zone. ACC 17.48.030 includes two uses which are relevant to the pipeline: *A. Storage of inflammable liquids and gasses.; and C. Refineries for petroleum products.* The pipeline project would not include a refinery, nor would there be storage in Adams County, unless the petroleum products that are moving through the pipeline are considered to be similar to "storage". The requirement for a conditional use permit would trigger ACC 17.68.280, requiring conformance to ACC 18.06 Critical Areas.
- (2) Alternatively, the applicant could seek a permit under Unclassified Uses, ACC 17.72.020(C). Such an application would trigger ACC 17.72.050, requiring conformance to ACC 18.06 Critical Areas.

A request was made in August 1997 to Grant County for consideration as an "Unclassified Use". As of January, 1998, Grant County has not provided OPL with a written response that they would not consider an unclassified use, although the County is proceeding with preparing a text amendment to their zoning code to provide a permitting process for pipelines as a conditional use in all zones.

## **Analysis**

Given that the proposed pipeline project would be located underground and that agricultural uses would continue over the pipeline, it would not seem appropriate to analyze a potential rezone of the agricultural land to manufacturing. The more appropriate option would seem to be the review of a permit application as an "Unclassified Use".

This chapter (ACC 17.72.020) of the ordinance establishes an individualized permit review process that includes a review and recommendation by the planning commission, a public hearing, and a final decision by the county board of commissioners. The criteria used to make the final decision include the following:

1. The environmental impacts of the proposed use.
2. The county's comprehensive plan.
3. The extent of its compatibility with surrounding uses and property.
4. The economic impacts of the use.
5. Any public benefits from establishment of the use.

As part of the approval, the county board of commissioners may also require additional conditions and restrictions on the siting and operation of the use as deemed necessary to accomplish the requirements of relevant portions of the county code.

The pipeline use has been routed to be compatible with surrounding uses and property. There would be an economic benefit of the use to Adams County from tax revenue both during the construction and operation phase of the project. The general public in central Washington will benefit from the proposed pipeline due to an increased reliability of delivery and availability of petroleum products.

We conclude that the project conforms to the Critical Areas Ordinance. As the Zoning Code allows for the permitting of "Unclassified Uses" subject to meeting the above criteria, it would appear that the pipeline project could be permitted under zoning. Alternatively, the pending text amendment, if adopted by Grant County will permit pipelines as a conditional use in all zones. provide for a pipelines

**Adams County Shorelines Management Master Program:** The proposed pipeline route through Adams County crosses seven streams: Lower Crab Creek, Owl Creek, one unnamed stream, and four irrigation canals. All of these waterways are subject to the Washington State Shoreline Management Act of 1971, and therefore are subject to the policies of the Adams County Shorelines Management Master Program.

Section 9.00 of the Adams County Shoreline Master Program includes a definition of "Utilities":

*Utilities are services which produce and carry electric power, gas, water, steam, sewage, communications and oil. At this time, the most feasible methods of transmission are the lineal ones of pipes and wires. The installation of this apparatus necessarily disturbs the landscape, but can be planned to have minimal visual and physical effect on the environment.*

There are two shoreline policies in Section 9.00, both of which are applicable to the project:

*9.01 After maintenance and installation operations, shorelines should be restored to pre-project configuration and replanted with native species when desirable.*

OPL has proposed to restore all shorelines to pre-project configuration and to replant the shorelines with native species. The proposal is consistent with this policy.

*9.02 Whenever these facilities must be placed in a shoreline area, the location should be chosen so as not to obstruct or destroy scenic views. Whenever feasible, these utilities should be placed underground.*

The pipeline will be placed underground and will not obstruct or destroy scenic views. The proposal is consistent with this policy.

None of the waterways crossed by the proposed pipeline project are specifically listed in the Adams County Shoreline Master Program and, as such, the environments have not been designated as "conservancy", "rural", or "suburban". However, structures and land uses necessary for utility functions are permitted as conditional uses in all three shoreline environments.

The project is consistent with the Shoreline Management Master Program of Adams County.

#### Franklin County

**Franklin County Comprehensive Plan:** The Franklin County Comprehensive Plan was adopted by Resolution #95-071 of the Franklin County Board of Commissioners in 1995. The proposed pipeline route crosses four different land use designations under the Franklin County Comprehensive Plan: Resource Lands; Rural Areas; Urban Areas; and Industrial Areas. The Franklin County Comprehensive Plan does not contain specific policies regarding the siting of a petroleum products pipeline. However, it appears that the siting of a petroleum products pipeline would be governed by the Utilities Element of the Comprehensive Plan.

Page 153 of the Comprehensive Plan states: This section consists of "the general location, proposed location, and capacity of all existing and proposed utilities, including, but not limited to, electrical lines, telecommunications lines, and natural gas lines." (emphasis added). All of the utilities listed are linear facilities, as would be the proposed Cross Cascade Pipeline.

Under the Utilities Elements of the Comprehensive Plan, there are policies and objectives regarding the siting of utility systems.

### **Policy Language (Pages 160 - 161)**

1. Ensure energy, communication, solid waste facilities and other public facilities and services are available for future development.
  - 1.1 Minimize impacts associated with the siting, development, and operation of utility services and facilities on adjacent properties and the natural environment.
2. Ensure coordination between Franklin County and utilities providers for consistence between the growth plans for the County and the system plans of each utility.
  - 2.1 Franklin County shall retain copies of and refer to the comprehensive system plans of each utility serving the County.
3. Ensure that utilities providers utilize the Land Use, Rural Lands Elements of Franklin County's Comprehensive Plan in planning for expansion of their facilities.
  - 3.1 Provide utilities with updates and amendments to the comprehensive plan which should include projections of population, employment and development growth rates.
4. Monitor the siting of new utility facilities so as to avoid or mitigate adverse environmental consequences.
  - 4.1 Determine the capability of land and natural systems when providing such facilities and services as storm water drainage and flood prevention, water, sewage/septic and solid waste disposal.

All of these policies would be met by the proposed project. The intent of the project is to ensure an adequate future supply of petroleum products to Eastern Washington cities and counties, and to Franklin County and Pasco based on expected population and development growth rates. The corridor has been routed to avoid sensitive areas, and to utilize existing utility and roadway rights-of-ways to the extent feasible. An EIS is being prepared by EFSEC, and the process will include full public participation.

### **Objective Language**

#### **General**

- |              |   |
|--------------|---|
| Objective 1. | Maintain consistency between utility providers and County plans.  |
| Objective 2. | Provide and ensure adequate utility capacity for future growth.   |
| Objective 3. | Encourage cost-effective utility service.   |
| Objective 4. | All utility lines should be located underground wherever practicable, using sound engineering judgement, and in accordance with rules, regulations and tariffs applicable to the serving utility. |
| Objective 5. | Utility facilities should be designed to be compatible with adjacent land uses.   |

The proposed project is consistent with all 5 objectives. As stated above, the intent of the project is to

provide for and ensure adequate petroleum product capacity for future growth. The project proponent, Olympic Pipe Line Company, has found that pipelines are a cost-effective means of transporting and delivering product. The proposed pipeline will be located underground using sound engineering judgement, and in accordance with rules, regulations and tariffs governing petroleum product pipelines. The underground pipeline will not preclude any adjacent land uses, including the continuance of farming activities over the top of the pipeline.

**Franklin County Zoning Ordinance #18-80:** The Franklin County Zoning Ordinance was adopted by Franklin County as Ordinance # 18-80 in September of 1980. The proposed pipeline crosses four zones under the Franklin County Zoning Ordinance: Agricultural Production; Residential Mobile Home-1 Acre; General Commercial; and Light Industrial.

- (f) Petroleum products pipelines are not specifically listed in any of the zones, although may be classified as a "transmission line".
- (g) Agricultural Production Zone. Transmission lines are permitted as a conditional use in the Agricultural Production Zone (Section 1.4, Item G., page 26).
- (h) Residential Mobile Home-1 Acre. The Residential Mobile Home-1 Acre section is silent on transmission lines.
- (i) General Commercial. The General Commercial section is silent on transmission lines.
- (j) Light Industrial. In the Light Industrial Zone, any use permitted in a C-1 or C-2 zone is permitted. Under the C-2 Zone, Section 10.2 Permitted Uses, Item H permits "Buildings and uses of a public works, public services, or a utility nature, but not including equipment storage or repair yards, warehouses, or related activities." (emphasis added).
- (k) Chapter 7 of the Zoning Code contains General Provisions, including Section 8 Supplemental Use Classifications (Planning Determination). This section states: When a use is not specifically listed in the sections devoted to uses permitted, it shall be assumed that such uses are hereby expressly prohibited unless a decision by the Planning Commission determines that said use is similar to and not more objectionable than the use specifically permitted." (page 71).

On April 2, 1996, the Franklin County Planning Commission found that the pipeline could be permitted as a conditional use.

**Franklin County Shoreline Management Master Program:** The pipeline corridor crosses several natural and manmade waterways in Franklin County. One of these waterways, Esquatzel Coulee, is subject to the

Washington State SMA. The termination of the pipeline in eastern Pasco on the west bank of the Snake River is also within a shoreline area subject to SMA. The shorelines of Esquatzel Coulee and the Snake River are designated Shorelines of Statewide Significance (see SMA discussion above). Development along these shorelines is guided by the policies of the Franklin County Shoreline Management Master Program (SMMP). The region of the Esquatzel Coulee crossed by the pipeline route is designated by the SMMP as Rural Environment, while the region of the Snake River shoreline crossed by the route has a designation of Urban Environment. Under the Franklin County SMMP a Rural Environment is "intended for those areas characterized by intensive agricultural and recreational uses and those areas having a high capability to support active agricultural practices and intensive recreational development. Hence, those areas that are already used for agricultural purposes, or which have agricultural potential, should be maintained for present and future agricultural needs. Designation of rural environments should also seek to alleviate pressures of urban expansion on prime farming areas." An Urban Environment "is an area of high intensity land use including residential, commercial, and industrial development. It is particularly suitable to those areas presently subjected to extremely intensive use pressure, as well as areas planned to accommodate urban expansion. Shorelines planned for future urban expansion should present few biophysical limitations for urban activities and not have a high priority for designation as an alternative environment." In both the Rural and Urban Environment SMMP shoreline designations, utilities, such as petroleum pipelines, are listed as a conditional use subject to SMMP policies and regulations.

#### City of Snoqualmie

**Snoqualmie Vicinity Comprehensive Plan:** The Snoqualmie Vicinity Comprehensive Plan was adopted in 1994. The proposed pipeline route crosses land designated as Parks and Recreation under the Comprehensive Plan. There are no specific policies on the siting of petroleum products pipelines under the Snoqualmie Vicinity Comprehensive Plan.

Element 3 contains policies for land use, with policies for Parks, Recreation and Open Space found in C.11. C.11 contains one objective:

Strive to provide sufficient parks, recreation, and open space areas to meet the needs of the City as described in the various elements of the Comprehensive Plan and the City's Open Spaces, Park and Recreation Comprehensive Plan.

This objective is followed by 5 policies on the provision of adequate parks and recreation space. There are no policies which address uses within park or recreation lands. The proposed pipeline would not be inconsistent with the stated objective nor the 5 stated policies.

Element 7: Capital Facilities and Utilities provides policies for the other types of utility pipelines including natural gas, sewer, water and stormwater, buried cable line for telephones and cable television, and above

ground transmission lines and transmission substations. The section begins with one general objective:

Facilitate the provision of reliable utility service to existing and future residents in a way that balances utility needs with public concerns over safety and health, fair and reasonable prices for a utility's products, respect for Snoqualmie's natural environmental, and aesthetics compatibility with surrounding land uses.

The objective is followed by a list of 14 policies. There are four (4) policies that appear applicable to this proposal: Policies 7.F.3, 7.F.7, 7.F.8, and 7.F.9. Policy 7.F.3 states: Coordinate and seek to cooperate with other jurisdictions in the implementation of multi-jurisdictional utility facility additions and improvements. Attempt to coordinate the procedures for making specific land use decisions to achieve consistency in timing and requirements among jurisdictions.

Policy 7.F.7 states as follows: Encourage utilities to design, construct, and maintain facilities to minimize their impact on surrounding neighborhoods. Require notification to the City prior to a utilities maintenance or removal of vegetation in a City right-of-way. Require the undergrounding of all existing and new electrical distribution and communication lines where it is reasonable feasible and there is not a health or safety threat, and require reasonable screening and/or architecturally compatible integration of all new above-ground facilities.

Policy 7.F.8 states: Encourage the joint use of utility corridors, provided that such joint use is consistent with limitations as may be prescribed by applicable law and prudent utility practice. Encourage the consolidation of facilities using poles where reasonable feasible.

Policy 7.F.9 states: Where feasible, consider the coordination and co-location of new utility facilities and transportation facilities.

The proposed pipeline would be consistent with all of these policies. The project is being reviewed by EFSEC, which provides coordination among jurisdictions for a multi-jurisdictional utility, the project is located underground, and the project is to be co-located with the existing Cedar Falls Trail.

**Snoqualmie Zoning Code:** The Snoqualmie Zoning Code is codified as Title 17 of the Snoqualmie Municipal Code. The proposed pipeline route crosses one zone under the Snoqualmie Zoning Code: Parks and Open Space. Chapter 17.55 of the Snoqualmie Zoning Code lists permitted uses. "Public utilities" are listed under Section 6.20 as a conditional use in the Parks and Open Space zone. There is no definition in the Zoning Code for a "public utility". It is assumed the proposed pipeline would be considered a "public utility" for the purposes of zoning classification. Therefore the proposed project would be consistent with zoning, pursuant to conditional use criteria.



**City of Snoqualmie Shoreline Management Master Program:** The proposed pipeline route crosses one waterway in the City of Snoqualmie: Meadowbrook Slough. This waterway is not subject to the Shoreline Management Act, RCW 90.58 et seq.

#### City of North Bend

**North Bend Comprehensive Plan:** The City of North Bend Comprehensive Plan was adopted on May 16, 1995. The pipeline route would be located entirely within King County's "Cedar Falls Trail - Snoqualmie Valley Extension". The trail is designated as a "Parks, Open Space, and Public Facilities" district. The edge of the pipeline right-of-way may also cross land designated as Residential Neighborhood.

The Comprehensive Plan does not contain siting policies specific to petroleum product pipelines, although Chapter 5 contains the Utilities Plan Element. Within the section, there are 5 goals listed. Policy U-3.1 encourages the multiple use of corridors for trails, transportation rights-of-way and utilities. As noted above, the pipeline would be located within the Cedar Falls Trail, and would be consistent with this policy. The siting the proposed pipeline would not be inconsistent with any of the other listed goals or policies.

**North Bend Comprehensive Zoning Title 18:** The City of North Bend Zoning Code is codified as Title 18 of the North Bend Municipal Code. The proposed pipeline and trail corridor lie within four zoning districts: Manufacturing Park (MP); General (G); Single Family Residential 9066 (SF-9600); and Single Facility Residential (RS-7000).

Paul Messina, City Administrator of the City of North Bend, in a letter to Frederick S. Adair, Chair of EFSEC, dated March 14, 1996, concluded that the pipeline would likely be a permitted use in Manufacturing Park and General districts, and a conditional use in both the RS-9600 and RS-7000 districts.

**North Bend Shoreline Master Program:** The North Bend Shoreline Master Program is codified as Chapter 15.44 of the North Bend Municipal Code. The proposed pipeline route crosses the South Fork of the Snoqualmie River once within the City of North Bend on the Cedar Falls Trail. The region of the South Fork of the Snoqualmie River crossed by the pipeline route is designated Conservancy Environment under the North Bend Shoreline Master Program. In the Conservancy Environment, utilities are a permitted use subject to the policies and regulations of the North Bend Shoreline Management Master Program (Section 15.44.200.F). The proposed pipeline would be hung on an existing bridge, and would be consistent with the North Bend Shoreline Management Code.

### City of Kittitas

**City of Kittitas Comprehensive Plan:** The City of Kittitas adopted its Comprehensive Plan in September, 1997. The pipeline would enter the town on the south side of the JWT. The Comprehensive Plan includes the Kittitas Terminal site within its Urban Growth Area, and designates the land as "industrial".

**City of Kittitas Zoning Code:** All the land crossed by the proposed pipeline route in Kittitas is zoned Highway Commercial. Under the Kittitas Zoning Code, the purpose of this zoning designation is "to provide for commercial activities directed towards and dependent upon passing motor vehicle traffic. Because of locational needs and resulting traffic patterns, such commercial activities are generally considered incompatible with the characteristics of the central business district or the various residential districts." Typical permitted uses in this zone include restaurants, automobile and truck service stations, motels/hotels, and tourism-oriented operations.

The proposed Kittitas Terminal site is located within unincorporated Kittitas County. See discussion above under "Kittitas County".

Petroleum products pipelines are not specified in the Highway Commercial zone under the Kittitas Zoning Code. However, these uses will not be inconsistent nor interfere with existing uses, other permitted uses, and the applicable policies of the subject zones in this jurisdiction.

### City of Pasco

**City of Pasco Comprehensive Plan:** The City of Pasco Comprehensive Plan was adopted by the Pasco City Council in August 1995. Chapter 6 of the Comprehensive Plan addresses Utilities and Facilities. There are no specific policies for petroleum products pipelines, although CP.6.8 provides for natural gas, communications and electricity. Page 82 states that: "There are two pipeline corporations serving the region, Pacific Gas Transmission Company and Northwest Pipeline Corporation. Local distribution of natural gas in the Pasco UGA is supplied by Cascade Natural Gas Corporation... Northwest Pipeline is currently planning to construct a reduction and gate station in Section 10 northeast of the baseball stadium. This will enable Cascade Natural Gas to effectively provide gas service to the I-182 corridor." A petroleum products pipeline would not be inconsistent with other permitted pipelines. The proposed pipeline terminates in eastern Pasco near the Snake River in an area designated as Industrial under the Pasco Comprehensive Plan.

**City of Pasco Zoning Ordinance:** The Pasco Zoning Code is codified as Title 22 of the Pasco Municipal Code. The Zoning Code does not include a definition of a pipeline, a utility, or a transmission line. The Zoning Code does not contain specific provisions for permitting utility or transmission lines.

The proposed pipeline route crosses two zones: Heavy Industrial (I-3) and Light Industrial (I-1).

Chapter 22.61 describes the permitted uses in the I-3 zone: 22.61.020 PERMITTED USES. The following shall be permitted in the I-3 zone: 1) All uses not otherwise prohibited by law except those listed in 22.61.030. Subsection 22.61.030 PROHIBITED USES lists 5 uses are prohibited in the I-3 district: (single-family dwellings; (2) multiple family dwellings; (3) public and private schools except for apprenticeship and vocational training programs; (4) churches; and (5) group care homes. Petroleum pipelines are not listed as a prohibited use and therefore would be allowed as a permitted use pursuant to 22.61.020.

Section 22.56.010 describes the permitted uses in the I-1 zone. Petroleum pipelines are not listed as a permitted use. Section 22.56.020 described the prohibited uses in the I-3 zone. A petroleum products pipeline would not be classified as "noxious or injurious by reason of production, or emission of dust, smoke, or refuse mater, odor, gas fumes, noise, vibration, or substances or conditions provided" and would not be a prohibited use. This section goes on to state "however, that any use may be permitted by special permit, in accordance with Chapter 22.80." A petroleum products pipeline would not be inconsistent with other uses permitted in the light industrial zone, although may need to be permitted through the "special permit" process.

**City of Pasco Shoreline Management Act:** The pipeline project does not cross any lands within the City of Pasco that are designated shorelines.

### **Discussion of Federal and State Plans**

The following discussion addresses the plans and policies of Federal and State Agencies which own and/or manage lands crossed by the proposed pipeline route.

#### U.S. Forest Service - Mt. Baker-Snoqualmie National Forest

**Land and Resource Management Plan:** In eastern King County, approximately 10 miles of the proposed pipeline route traverse the Mt. Baker-Snoqualmie National Forest. The area of the Forest crossed by the proposed route is classified as Scenic Forest under the Mt. Baker-Snoqualmie National Forest, Land and Resource Management Plan. Under the Plan, the intent of the Scenic Forest classification is "to retain or enhance viewing and recreation experiences." Development and other uses of forested areas visible from recreation sites, roads, and trails within the Scenic Forest classification are required to meet specific visual quality objectives contained in the Plan. Land uses in these areas are required to be integrated with the natural landscape. Timber harvests on Scenic Forest lands employ a full range of silvicultural prescriptions to meet the visual and recreational objectives of the Plan.

The Land and Resource Management Plan does not contain specific policies on the siting of refined petroleum products pipelines. However, under the Forest-Wide Standards and Guidelines section of the Plan (Chapter 4 Section D), there are policies on the private use of Forest Service lands, and on the siting of utility and transportation corridors which may be applicable to the project. Of specific note are the following policies: (1) the Land Uses Goal, which states "To be responsive in the consideration of the use and occupancy of the Forest by private individuals, Federal, State, and local governments when such use is consistent with Forest management objectives, is in the public interest, and cannot be reasonably served by development on private land."; (2) Policy 2 under the Utility and Transportation Corridors heading, which states "When applications for rights-of-way for utilities and highways are received, the Forests' first priority will be to utilize residual capacity (within or contiguous) in existing corridors. The corridors will be planned and located to minimize ground and air disturbance."; and (3) Policy 4 under the Utility and Transportation Corridors heading, which states "Potential utility and transportation rights-of-way will be examined in relation to issues and concerns and resource management objectives."

The proposed pipeline route lies within existing trail, road, and transmission corridors in approximately 22 of the 23 miles it traverses within the boundaries of the Mt. Baker-Snoqualmie National Forest.

During project planning and prior to construction of the Cross Cascade Pipeline Project, coordination with Forest staff will occur to minimize potential environmental impacts, and to mitigate the general disruption caused by the construction activities. All reasonable attempts will be made to conform with the standards and guidelines of the Land and Resource Management Plan.

#### U.S. Forest Service - Wenatchee National Forest

**Forest Plan:** In western Kittitas County, approximately 12 miles of the proposed pipeline route traverse the Wenatchee National Forest. In this portion of the National Forest, Forest Service land ownership alternates with other ownerships in a "checkerboard" pattern. The areas of the National Forest crossed by the proposed pipeline route have the following classifications under the Wenatchee National Forest Plan: Scenic Travel - Retention (ST-1), Scenic Travel - Partial Retention (ST-2), Riparian Zone (EW-2), and General Forest (GF).

According to the Forest Plan, the goal of the Scenic Travel - Retention classification is "To retain or enhance the viewing and recreation experiences along scenic travel routes." In areas with the ST-1 classification, development and permitted uses are required to meet the "Retention" Visual Quality Objectives in foreground and middleground areas, as viewed from developed recreation sites and designated roads and trails. Developments and forest management activities are generally not visually apparent within ST-1 areas. The Plan describes the goal of the Scenic Travel - Partial Retention classification as "[providing] a near natural appearing foreground and middleground along scenic travel corridors." In areas with the ST-2 classification, development and permitted uses are required to meet the "Partial Retention"

Visual Quality Objectives in foreground and middleground areas, as viewed from developed recreation sites and designated roads and trails. Foreground views in ST-2 areas are typically comprised of large trees throughout, or groves of large trees intermixed with a variety of other age classes. Development and forest management activities may be visible in middleground views in ST-2 areas.

Under the Forest Plan, the goal of the Riparian Zone classification is to "Maintain and enhance riparian management areas to perpetuate their distinctive resource values to (a) achieve and maintain habitat conditions necessary to maximize long-term natural production opportunities for desired fish species, (b) maintain water quality that meets or exceeds State Standards and (c) provide diverse wildlife habitat." The EW-2 classification is applied to the land and vegetation adjacent to Class I, II, and fish-bearing Class III streams, lakes, and wetlands. The Plan describes the Riparian Management Area (RMA) as corresponding to at least the recognizable area dominated by riparian vegetation (true Riparian Zone), and sufficient adjacent area (influence area) to assure adequate protection to achieve riparian management objectives and standards in the drainage.

The Forest Plan describes the goal of the General Forest classification as "Providing] for long-term growth and production of commercially valuable wood products at a high level of investment in silvicultural practices." National Forest lands with the GF classification are characterized by a wide spectrum of forest management intensity. This ranges from areas under intensive timber management typified by stands of regularly spaced trees of similar age and height, to areas with tree characteristics similar to natural stands.

The Forest Plan does not contain specific policies on the siting of refined petroleum products pipelines. However, under the Standards and Guidelines section of the Plan (Chapter 4), there are policies on Special Use Management of Forest Service lands which may be applicable to the project. Of note are the following policies under the Special Use Management heading: (1) Policy 1, which states "Land use requests will be reviewed for compatibility with Forest plan prescriptions and allocations."; (2) Policy 3, which states "Where a use can be accommodated on private or other land, National Forest land will not be used."; (3) Policy 4, which states "Private uses will generally be on a charge basis, whereas use by other public agencies will usually be without charge."; and (4) Policy 6, which states "New transportation/utility proposals should be accommodated within existing corridors to the maximum extent feasible."

During project planning and prior to construction of the Cross Cascade Pipeline Project, coordination with Wenatchee National Forest staff will occur to minimize potential environmental impacts, and to mitigate the general disruption caused by the construction activities. All reasonable attempts will be made to conform with the standards and guidelines of the Forest Plan.

## U.S. Bureau of Reclamation - Yakima and Columbia Basin Projects

As part of the Yakima and Columbia Basin Projects, the U.S. Bureau of Reclamation (BOR) has constructed an extensive system of dams, hydroelectric power plants, irrigation canals, and other water distribution facilities. This system provides irrigation water to areas throughout central and eastern Washington State. Many of the BORs facilities, and the lands associated with them, provide recreational opportunities to large numbers of the state's population. In addition, the Yakima and Columbia Basin Projects also include land holdings that provide valuable habitat for a wide variety of wildlife.

Bureau of Reclamation lands and facilities within the Yakima and Columbia Basin Projects are not grouped into contiguous parcels, but are widely dispersed along the entire eastern Washington portion of the route. BOR dams in the vicinity of the proposed route include the following: Keechelus Dam, on the Yakima River, 9 miles southeast of Snoqualmie Pass; Kachess Dam, on the Kachess River, 2 miles northwest of Easton; Easton Diversion Dam, on the Yakima River, near Easton; and Cle Elum Dam, on the Cle Elum River, 8 miles northwest of Cle Elum. Major BOR canals crossed by the proposed pipeline route include the following: Kittitas Main Canal, North Branch Canal, Royal Branch Canal, Crab Creek Lateral Canal, Wahluke Branch Canal, Potholes Canal, and the Esquatzel Diversion Channel.

At present, the Bureau of Reclamation does not have a formal planning document for its lands and facilities within the Yakima and Columbia Basin Projects. Land use and facility management decisions are made under Section 43 of the Code of Federal Regulations. In addition, a management plan is currently being prepared for the administration of approximately 90,000 acres of lands and facilities within the Columbia Basin.

During project planning and prior to construction of the Cross Cascade Pipeline Project, coordination with Bureau of Reclamation staff will occur to minimize potential environmental impacts, and to mitigate the general disruption caused by the construction activities. All reasonable attempts will be made to conform with the established Bureau of Reclamation land use standards and guidelines.

### Alternative Route Across U.S. Bureau of Land Management - Bureau of Land Management Lands and Yakima Firing Center Expansion Area

**BLM Manual:** The proposed pipeline route would be located north of I-90 immediately to the west of the Columbia River. An alternative route was originally proposed to the south of I-90. Portions of the alternative Cross Cascade Pipeline route would cross lands administered by the Bureau of Land Management (BLM). The largest of these parcels is located in eastern Kittitas County, north of the U.S. Army's Yakima Firing Center. This parcel is often referred to as the Yakima Firing Center Expansion Area. In 1993, the BLM approved a land withdrawal application filed by the U.S. Army Corps of

Engineers, for the use of this parcel as part of the expansion plans for the Yakima Firing Center. This land withdrawal requires Congressional approval to become finalized. At this writing, final approval by Congress had yet to be obtained. In the interim, administration of the parcel remains with the BLM, even though this agency has approved its withdrawal by the Army.

Activities on Bureau of Land Management lands are subject to the policy guidelines and regulations contained in the BLM Manual. The Manual contains policies and standards that regulate the siting of petroleum pipelines on BLM lands. BLM Manual Section 2800.06 contains specific policies that may be pertinent to the Cross Cascade Pipeline Project. These policies include the following: (1) Policy B, which states "Manage right-of-way use of the public land through a system of designated right-of-way corridors. The use of right-of-way corridors will be actively encouraged by the Bureau managers whenever practical and feasible."; (2) Policy C, which states "Whenever applicable, apply categorical exclusion provisions for rights-of-way applications for lands within designated corridors."; (3) Policy F, which states "Provide all right-of-way applications and grants timely and equitable consideration and the highest degree of public service."; and (4) Policy I, which states "Assure to the greatest extent possible that all identified impacts are mitigated and that the terms and conditions of the right-of-way grant are complied with."

During project planning and prior to construction of the Cross Cascade Pipeline Project, coordination with Bureau of Land Management and Army Corps of Engineers staff will occur to minimize potential environmental impacts, and to mitigate the general disruption caused by the construction activities. All reasonable attempts will be made to conform with the standards and guidelines of the BLM Manual.

#### Bonneville Power Administration

Portions of the proposed Cross Cascade Pipeline route cross lands within existing Bonneville Power Administration (BPA) transmission rights-of-way. BPA allows joint use of its transmission rights-of-way for pipeline installation within established regulations pertaining to operation, maintenance, and safety. In some areas, BPA owns the land (fee simple) in its transmission substations. However, in nearly all other locations, BPA has acquired an easement from a landowner which permits the agency to maintain a transmission right-of-way through the landowner's property. In the latter case, permission from the landowner would also be required prior the siting of the proposed pipeline in the BPA right-of-way.

During project planning and prior to construction of the Cross Cascade Pipeline Project, coordination with Bonneville Power Administration staff and affected landowners would occur to minimize potential environmental impacts, and to mitigate the general disruption caused by the construction activities. All reasonable attempts will be made to conform with BPA standards and regulations regarding joint use of their transmission rights-of-way.

### U.S. Fish and Wildlife Service - Columbia National Wildlife Refuge

**Refuge Manual:** In Grant and Adams counties, portions of the proposed Cross Cascade Pipeline route pass near the Columbia National Wildlife Refuge (CNWR). The CNWR is located on several parcels totalling 23,200 acres along Lower Crab Creek, and is administered by the U.S. Fish and Wildlife Service.

The Refuge contains many small pothole lakes that are stocked with trout annually, and serves as overwintering habitat for over 100,000 ducks and geese on the Pacific Flyway. In addition to the valuable wildlife habitat, the CNWR provides a wide array of outdoor recreation opportunities, including wildlife observation and photography, hiking, camping, and nature study. Part of the Refuge is also open for public waterfowl hunting.

The proposed Cross Cascade Pipeline route does not cross any of the lands within the Columbia National Wildlife Refuge. However, due to the proximity of the proposed route to the Refuge, during project planning and prior to construction, coordination with U.S. Fish and Wildlife Service staff will occur to minimize potential environmental impacts, and to mitigate any disruption that may be caused by the construction activities.

### National Environmental Policy Act and Washington State Environmental Policy Act

As mentioned above, the proposed Cross Cascade Pipeline Project crosses federally-managed lands in several locations along the proposed route. These lands are under the jurisdiction of the Departments of Interior, Agriculture, Defense, and Energy (BPA). In compliance with the National Environmental Policy Act (NEPA), one of these departments will be designated as the lead agency and will be responsible for compliance with the Act. At the state level EFSEC will assume lead agency status for compliance with the State Environmental Policy Act (SEPA). During the NEPA and SEPA processes, the project's impacts on the environment, proposed environmental safeguards, and mitigation measures will be thoroughly reviewed.

In cases such as this one where both NEPA and SEPA compliance are required, the respective lead agencies may decide to proceed with both the federal and state environmental review processes concurrently. As part of the NEPA/SEPA environmental review processes, public agencies, special interest groups, and private individuals will be given the opportunity to review and comment on the project.



### State of Washington - Energy Facility Site Evaluation Council

Chapter 80.50 of the Revised Code of Washington (RCW) and Washington Administrative Code (WAC) 463 regulate the siting of energy facilities such as the Cross Cascade Pipeline Project through the Energy Facility Site Evaluation Council (EFSEC). Applicants for certification from EFSEC are required to submit detailed information on the proposed project and the impacts the project may have on the natural and built environments. The applicant is also required to describe the means to be utilized to minimize or mitigate possible adverse impacts on the physical or human environment (WAC 463-42-085). Further, the applicant is required to set forth insurance, bonding, or other arrangements proposed in order to mitigate for damage or loss to the environment (WAC 463-42-075). The proposed Cross Cascade Pipeline Project will be under the jurisdiction of EFSEC.

Chapter 80.50 RCW operates as a state pre-emption of all matters relating to energy facility sites under the jurisdiction of EFSEC. Certification pursuant to Chapter 80.50 RCW is given in lieu of any permit, certificate, or similar document which might otherwise be required. WAC 463-28 sets forth procedures to be followed by EFSEC in determining whether or not to recommend that the state pre-empt local land use plans or zoning ordinances for a site or portions of a site for an energy facility. The applicant is required to make every effort, including changes to the project design, to comply with all local land use plans, zoning ordinances, and shoreline management plans in effect at the date of the application filing. An applicant unable to resolve specific noncompliance issues may file a written request for state pre-emption as authorized in WAC 463-28-020. A pre-emption request must show the following:

- That the applicant has demonstrated a good-faith effort to resolve the noncompliance issues.
- That the applicant and the local authorities are unable to reach an agreement which will resolve the issues.
- That alternate locations which are within the same county and city have been reviewed and have been found unacceptable.
- Interests of the state as delineated in RCW 80.50.010.

At this time, no pre-emptions are anticipated for the proposed Cross Cascade Pipeline Project.

### State of Washington - Growth Management Act

In 1990, the Washington State Legislature passed the Growth Management Act (ESHB 2929), or GMA, as a response to growth and development pressures in the state. In 1991 the GMA was amended to further define requirements and to establish a framework for coordination among local government agencies. The GMA, codified as RCW 36.70A, required local governments in fast-growing and densely-populated areas to develop and adopt comprehensive land use plans by July 1, 1993, and regulations to implement these

plans within a year of plan adoption.

As part of the GMA, the following 13 planning goals were adopted to guide the development and adoption of city and county comprehensive plans and development regulations (RCW 36.70A.020):

- 1) *Urban Growth:* Encourage development in urban areas where adequate public facilities and services exist or can be provided in an efficient manner.
- 2) *Reduce Sprawl:* Reduce the inappropriate conversion of undeveloped land into sprawling, low-density development.
- 3) *Transportation:* Encourage efficient multimodal transportation systems that are based on regional priorities and coordinated with county and city comprehensive plans.
- 4) *Housing:* Encourage the availability of affordable housing to all economic segments of the population of this state, promote a variety of residential densities and housing types, and encourage preservation of existing housing stock.
- 5) *Economic Development:* Encourage economic development throughout the state that is consistent with adopted comprehensive plans, promote economic opportunity for all citizens of this state, especially for unemployed and for disadvantaged persons, and encourage growth in areas experiencing insufficient economic growth, all within the capacities of the state's natural resources, public services, and public facilities.
- 6) *Property Rights:* Private property shall not be taken for public use without just compensation. The property rights of landowners shall be protected from arbitrary and discriminatory actions.
- 7) *Permits:* Applications for both state and local government permits should be processed in a timely and fair manner to ensure predictability.
- 8) *Natural Resources Industries:* Maintain and enhance natural resource-based industries, including productive timber, agricultural, and fisheries industries. Encourage the conservation of productive forest lands and productive agricultural lands, and discourage incompatible uses.
- 9) *Open Space and Recreation:* Encourage the retention of open space and development of recreational opportunities, conserve fish and wildlife habitat, increase access to natural resource lands and water, and develop parks.

- 10) *Environment:* Protect the environment and enhance the state's high quality of life, including air and water quality, and the availability of water.
- 11) *Citizen Participation and Coordination:* Encourage the involvement of citizens in the planning process and ensure coordination between communities and jurisdictions to reconcile conflicts.
- 12) *Public Facilities and Services:* Ensure that those public facilities and services are available concurrently with development, while maintaining current service levels at locally-established minimum standards.
- 13) *Historic Preservation:* Identify and encourage the preservation of lands, sites, and structures, that have historical or archaeological significance.

The above 13 goals were not prioritized by the legislature, in recognition that priorities would vary by community.

Only the state's fastest growing counties and cities were required to plan under the GMA. Planning under the Act was optional for all other cities and counties, triggered only by a majority vote of the county commissioners. Communities required to plan were (1) those counties with a population of 50,000 or more, with a growth rate of greater than 10 percent over the previous 10 years (and the cities within such counties); (2) those counties with a growth rate of more than 20 percent over the previous 10 years, regardless of current population (and the cities within such counties); and (3) any community which voluntarily elected to plan under the Act (RCW 36.70A.040).

Five of the six Cross Cascade Pipeline Project counties (Snohomish, King, Kittitas, Grant, and Franklin) prepared and adopted, or are in the process of preparing, comprehensive plans under the GMA. Adams County was not required to plan under the GMA and opted not to do so, in part due to its small population (pers. comm., Caputo, 1995). Nevertheless, Adams County is currently preparing a new comprehensive plan, with plan adoption expected in 1998. Three of the four cities crossed by the proposed pipeline route (Snoqualmie, North Bend, and Pasco) prepared and adopted new comprehensive plans in response to the GMA. The City of Kittitas prepared a new comprehensive plan, with plan adoption in 1997. Comprehensive plans for cities and counties crossed by the proposed pipeline route are discussed above.

The GMA also established mandatory requirements for all counties and cities, whether required to plan under the Act or not. One mandate of particular note was the requirement that all counties and cities designate and classify critical areas (RCW 36.70A.060 part (2)). Under the GMA, critical areas include wetlands, fish and wildlife habitat areas, geologically hazardous areas, flood-prone areas, and areas

important for aquifer recharge. The Act required all counties and cities to implement development regulations aimed at protecting the designated critical areas within their jurisdiction. These regulations were adopted as Critical Areas Ordinances (CAOs), and in some cases as Sensitive Areas Ordinances (SAOs). CAOs and SAOs typically contain criteria, standards, and requirements for construction in and near designated critical areas.

Section 2.14 Construction Methodology contains conventional methodologies for construction within critical areas. Coordination with EFSEC and affected jurisdictions will continue prior to the commencement of construction to further define the location, scope, and construction requirements of designated critical areas crossed by the pipeline route. Based on these determinations, detailed construction engineering plans and specifications will be developed and submitted to EFSEC for review.

#### State of Washington - Shoreline Management Act

Under the Washington State Shoreline Management Act (SMA) of 1971 (Chapter 90.58 RCW), all local governments are required to develop a Master Program for the classification, mapping, and regulation of all state designated shoreline areas within their jurisdiction. Under the SMA, the term "Shoreline" is defined as "all of the water areas of the state, including reservoirs, and their associated wetlands, together with the lands underlying them; except (i) shorelines of state-wide significance; (ii) shorelines on segments of streams upstream of a point where the mean annual flow is twenty cubic feet per second or less and the wetlands associated with such upstream segments; and (iii) shorelines on lakes less than twenty acres in size and wetlands associated with such small lakes."

The term "Shoreline of State-Wide Significance" applies to a special class of state designated shorelines and associated wetlands which typically front larger and more regionally important bodies of fresh and salt water. Inland Shorelines of State-Wide Significance include "(iv) Those lakes, whether natural, artificial, or a combination thereof, with a surface acreage of one thousand acres or more measured at the ordinary high water mark; (v) Those natural rivers or segments thereof as follows: (A) Any west of the crest of the Cascade range downstream of a point where the mean annual flow is measured at one thousand cubic feet per second or more, (B) Any east of the crest of the Cascade range downstream of a point where the annual flow is measured at two hundred cubic feet per second or more, or those portions of rivers east of the crest of the Cascade range downstream from the first three hundred square miles of drainage area, whichever is longer." All "Shorelines" plus "Shorelines of State-Wide Significance" together comprise "Shorelines of the State."

As mentioned above, local Shoreline Master Programs (SMPs) identify and regulate activities in Shorelines of the State within their jurisdiction, pursuant to the policies contained in the SMA. All Shorelines of the State are assigned Environment designations. These designations are based on existing vegetation, wildlife, and other ecological and biological characteristics, and also on existing land uses. SMP Environment

designations are used to distinguish one type of shoreline from another, and provide a basis for applying policies and regulations. The four major Environment designations are Urban, Conservancy, Rural, and Natural. In some local SMPs, these four categories may in turn contain sub-categories.

In addition to assigning Environment designations to all Shorelines of the State, local SMPs also regulate activities within Shorelines of State-Wide Significance in accordance with a separate set of guidelines contained in the SMA. Under these guidelines, preference is given to the following uses, listed in order of preference:

1. Recognize and protect the state-wide interest over local interest;
2. Preserve the natural character of the shoreline;
3. Result in long-term over short-term benefit;
4. Protect the resources and ecology of the shoreline;
5. Increase public access to publicly-owned areas of the shorelines;
6. Increase recreational opportunities for the public in the shoreline.

Local SMPs are prepared in accordance with Chapter 173-16 WAC Shoreline Management Act Guidelines for Development of Master Programs. WAC 173-16-060 subsection (9) lists regulation guidelines for proposed utility uses in Shorelines of the State. Specific guidelines in this subsection pertinent to the Cross Cascade Pipeline Project include the following: "(a) Upon completion of installation/maintenance projects on shorelines, banks should be restored to preproject configuration, replanted with native species and provided maintenance care until the newly planted vegetation is established. (b) Whenever these facilities must be placed in a shoreline area, the location should be chosen so as not to obstruct or destroy scenic views. Whenever feasible, these facilities should be placed underground, or designed to do minimal damage to the aesthetic qualities of the shoreline area."

Shorelines of the State crossed by the proposed Cross Cascade Pipeline route have been previously identified and addressed in this section in the discussions of county and city SMPs.

#### Washington Department of Fish and Wildlife - Columbia Basin Habitat Management Area

In Grant, Adams, and Franklin Counties, portions of the proposed Cross Cascade Pipeline route pass through and near lands owned and/or managed by the Washington Department of Fish and Wildlife (WDFW) as part of the Columbia Basin Habitat Management Area. In Grant County, 5 miles east of the Columbia River crossing, the proposed route crosses through the northern portion of the Crab Creek Wildlife Area. This portion of the Wildlife Area contains a mosaic of shrub steppe, riparian, and wetland areas which provide habitat to a wide range of species. In addition, parts of the Wildlife Area are also used for cropland. In northern Franklin County the proposed route crosses through the Bailey Boys Ranch. As part of the Snake River Dam mitigation program, WDFW has the perpetual hunting rights within the ranch

boundaries. The area contains high quality wetland and riparian habitats. In addition, portions of the ranch are used as livestock grazing land. The WDFW also manages the Wahluke Wildlife Area. This expansive wildlife habitat area stretches across Grant, Adams, and Franklin Counties. The proposed pipeline route is located to the north and east of the Wahluke Wildlife Area, and does not cross the wildlife area boundaries.

During project planning and prior to construction of the Cross Cascade Pipeline Project, coordination with Washington Department of Fish and Wildlife staff would occur to minimize potential environmental impacts, and to mitigate the general disruption caused by the construction activities. All reasonable attempts will be made to conform with the established WDFW land use standards and guidelines.

#### **5.1.1.4 Relationship to Existing Population**

Relationship of this project to existing population is discussed in Section 8.1 Socioeconomics.

### **5.1.2 HOUSING**

Relationship of this project to existing housing stock and conditions is discussed in Section 8.1 Socioeconomics.

### **5.1.3 LIGHT AND GLARE**

#### **5.1.3.1 Existing Conditions**

All of the proposed six pump stations will require minimum security lighting in the range of 1 to 3 foot-candles, which will be directed down and inward on the property. Lighting will likely be attached to low poles or mounted on walls of structures. Two of the sites, Thrasher and North Bend, are located in areas of potential residential viewers. The Thrasher site is located in wooded surroundings. The North Bend site is adjacent to the Cedar Falls Trail, however, there is a strip of land between the site and trail of approximately 40 feet in width which is covered in blackberry bushes. The strip of land is partially under an existing electrical transmission power line right-of-way that separates the site from the Cedar Falls Trails. If the right-of-way was cleared of the berry bushes, the pump station may be visible from properties across the trail. The land to the east of the site is vacant, although there are plans to develop the site to the east of the pump station for multi-family housing. The remaining proposed sites (Stampede, Kittitas, Beverly-Burke, and Othello) are located in more remote sites having fewer potential viewers. The Stampede site is located in forested surroundings, and the other three sites are located in open range or agricultural surroundings.

The Kittitas Terminal site is an open agricultural field adjacent to I-90 and Badger Pocket Road leading to

Kittitas. Presently, some ambient light has been introduced to the area by overhead highway illuminaires mounted on standard 40' high side-arm poles located at the highway overpass and off-ramps. Lighting at the Kittitas Terminal will be similar to the pump stations and will be directed down and inward on the 27-acre property. Because the facility is operated 24 hours, and equipment areas are more extensive than the smaller pump stations, lighting levels are anticipated to be higher in the range of 20 to 50 foot-candles. The facility will be illuminated throughout the night and in overcast weather.

#### **5.1.3.2 Visual Impacts**

Visual impacts related to light and glare at the pumping stations are expected to be low. In forested site locations, surrounding vegetation will screen much of the light spillover. At more open locations, the presence of low level lights is compatible with surrounding residential development or farmsteads. Since lighting will be directed downward, glare is not expected to create impacts.

Light and glare impacts at the Kittitas Terminal are also expected to be low. The facility is located in an open agricultural area with no nearby residences. Primary viewers will be travelers along I-90 and Badger Pocket Road, but the presence of facility lighting will be similar to existing lighting at the highway overpass, and may increase light levels along Badger Pocket Road for a short distance.

#### **5.1.3.3 Mitigation Measures**

Light and glare impacts are expected to be low. Therefore, no mitigation is proposed for light and glare.

### **5.1.4 AESTHETICS**

#### **5.1.4.1 Assessment Methodology**

This section describes existing visual conditions of the landscape setting through which the pipeline route will travel, in addition to numerous pipe staging areas and pump stations. The visual assessment consists of the following elements:

- Description of assessment methodology;
- Criteria for rating levels of visual quality, viewer sensitivity, and visual impacts;
- Assessing existing visual quality along the pipeline which will be described in segments which pass through subareas of similar visual character;
- Description of visual changes introduced by construction activities (pipeline and pumping stations), and operation of above-ground facilities (pumping stations). Visual changes will be discussed in terms of temporary or permanent landscape alterations;
- Identifying viewer types, estimating their view of the facility (general visibility and distance range), and their visual sensitivity;

- Preparation of two visual simulations: one view from the west-bound off-ramp of I-90 of the Kittitas Terminal, and one view of a steep hillside disturbance along eastbound I-90 towards the Columbia River Crossing (MP 125);
- Assessing visual impacts along each pipeline segment and at significant points of landscape feature crossings (rivers, etc.); and
- Recommending visual impact mitigation measures.

Regional topography, landscape cover, and pipeline routing information was analyzed by reviewing route mapping (see Map Atlas in Appendix A) annotated with notes and photography from field investigations, Visual Quality Objective (V.Q.O.) mapping for pipeline segments crossing the Mt. Baker-Snoqualmie Forest (U.S. Forest Service, 1990), and the Wenatchee National Forest (U.S. Forest Service, 1990). Field work consisted of driving and hiking the area to qualitatively determine general visibility of the corridor/facilities from residences, major roads, and other potentially sensitive viewpoints. Based on potential changes in existing visual quality, visibility, and viewer sensitivity stemming from the project, representative viewpoints were photodocumented and two key viewpoints were selected for visual simulation.

The pipeline corridor route traverses land managed by the U.S. Forest Service (USFS), Bureau of Land Management (BLM), the State of Washington, and private landholders. The methodology for assessing visual impacts generally conforms to the Visual Management System (VMS) developed by the U.S. Forest Service (U.S. Forest Service, 1977), but was modified to be more inclusive of non-Forest Service lands which have not been mapped in detail according to VMS procedures. Under the VMS system, baseline levels of visual quality are assigned one of three Variety Class levels: Class A (Distinctive), Class B (Common), and Class C (Minimal). Criteria for each Variety Class level, modified from the VMS system to better describe corridor conditions, are presented in Table 5.1.2. For this assessment, Variety Classes will be referred to as “High” Visual Quality (Class A), “Moderate” Visual Quality (Class B), and “Low” Visual Quality (Class C)

**TABLE 5.1-2**  
**VISUAL QUALITY CRITERIA**

<b>Landscape Component</b>	<b>High Visual Quality (Class A - “Distinctive”)</b>	<b>Moderate Visual Quality (Class B- “Common”)</b>	<b>Low Visual Quality (Class C- “Minimal”)</b>
Landform	Over 60% slopes which are dissected, uneven, sharp exposed ridges or large dominant features	30-60% slopes which are moderately dissected or rolling	0-30% slopes which have little variety. No dissection and no dominant features.
Rockform	Rockforms are prominent features in the landscape. Rock features are distinctive in size, shape, and location.	Rockforms are obvious, but not prominent in the landscape. Slopes, boulders, and rock outcrops are common, but not	Rockforms are small or nonexistent features in the landscape.



**TABLE 5.1-2 (CONTINUED)**  
**VISUAL QUALITY CRITERIA**

<b>Landscape Component</b>	<b>High Visual Quality (Class A - “Distinctive”)</b>	<b>Moderate Visual Quality (Class B- “Common”)</b>	<b>Low Visual Quality (Class C- “Minimal”)</b>
		outstanding.	
Vegetation	A high degree of patterning exists (variety of open spaces/vegetation cover). A high degree of color and textures are present due to species and age variety.	Continuous vegetation cover with some interspersed patterns. Within vegetated areas, there is common color and texture variety due to moderate species and age diversity.	Continuous (or sparse) vegetative cover with little or no patterns. In forest areas, there is marginal color/texture diversity due to minimal under story or ground cover.
Waterform (lakes, streams)	Lakes have distinctive shorelines in terms of edge configuration, rockforms, vegetation, and display of reflective qualities (lakes are typically larger than 50 acres) Drainage courses are numerous or unusual in terms of flow patterns (falls, rapids, pools, etc.)	Some variety is found in lake shoreline conditions and typically range in size from 5-50 acres. Minor reflections are present. Drainage courses exhibit common meandering and flow characteristics.	Lake shorelines exhibit little or no irregularly/variety and reflective qualities. Lake sizes are typically less than 5 acres. Drainage courses are intermittent or perennial with little or no fluctuation in flow or falls, rapids, or meandering.
Human-made Development	Human-made development includes or suggests natural elements in terms of color, textures, forms, etc. Human-made elements conform to, or reinforce, natural patterns like topography, etc. Human-made forms are aesthetic in design.	Human-made elements generally blend with some natural elements, but some incompatibilities exist in terms of scale, form, choice of color, etc.	Human-made development bears little or no relation to the natural setting due to choice of construction materials, pattern/composition, scale or maintenance.

The second major baseline component is view conditions. View conditions are dependent on general visibility, viewing distance, view duration/frequency, viewer group size, and general sensitivity to visual changes based on viewer type. Because of the length of the corridor and the diversity and number of potential viewers outside the corridor study area, view conditions were qualitatively estimated. Specific numbers are shown in the impact criteria (see Section 5.1.4.3); however, to establish general viewer group sizes for impact consideration. Typical viewer types and their general sensitivity to visual changes are as follows:

#### **Viewer Types with Low Visual Sensitivity**

##### Industrial Workers:

- Viewers are generally focused on work activities
- Viewer exposure is typically low due to confined structures/factories/warehouses
- View durations tend to be short due to focus on work activities

##### Work Commuters:

- Expectations of visual quality are generally low due to focus on road conditions/destination

### **Viewer Types with Moderate Visual Sensitivity**

#### Government Institution/Public Facilities Workers

- Viewer's activities tend to limit awareness of surroundings outside closed "campus" setting
- Viewer exposure is typically high due to potentially high number of people in group gatherings

#### Commercial Area Users:

- Visual quality is part of commercial appeal, particularly if corridor passes near commercial access points
- View duration is typically low

#### Agricultural Workers:

- Visual focus is typically on work activities
- Potential for long viewing duration

#### Local Travelers:

- Generally focused on destination; however, travel may be mixed with recreational purposes
- Concern for visual quality generally increased if traveling in local community

### **Viewer Types with High Visual Sensitivity**

#### Residents

- Expectation of high visual quality as part of living environment
- Frequent views of long duration
- Views, if permanent, may influence property values

#### Recreationists:

- Expectations of high visual quality as part of recreational experience
- Views can be of long duration

#### Recreational Traveler:

- Expectation of high visual quality and experience
- Longer view duration and exposure due to leisurely pace and potential for overlook pull-offs

Baseline levels of visual quality and view conditions/sensitivity for each corridor segment are described in Section 5.1.4.2. For lands managed by the U.S. Forest Service, these levels of visual quality (variety classes) and sensitivity have been mapped to establish Visual Quality Objectives (VQO). Applicable VQOs for the Mt. Baker-Snoqualmie and Wenatchee National Forests will be discussed in the appropriate pipeline route segments listed in Section 5.1.4.2. The criteria and discussion of potential visual impacts based on estimated changes to existing visual quality and view exposure are presented in Section 5.1.4.3.

#### **5.1.4.2 Existing Visual Quality and View Conditions/Sensitivity**

##### **Regional Setting**

The 231-mile refined products pipeline, which will extend from Woodinville, Washington, to Pasco, Washington, will pass through a variety of landscape settings with different levels of visual quality and visual sensitivity. At a regional level, the landscape settings are mainly determined by topography which establishes overall visual character at a broad scale. In western Washington, the pipeline corridor traverses low-lying lands and foothills with evergreen vegetation. As the route approaches and crosses the crest of the Cascade Mountains, the elevations change dramatically. Trees on the western side of the mountains tend to be predominantly Douglas fir; with Ponderosa pine dominating on the eastern side. Lands in eastern Washington include large undeveloped areas and agricultural fields of dryland and irrigated crops. The visual setting for each segment of the pipeline is described below.

##### **Pipeline Route**

Visual conditions along the pipeline route were described according to segment designations used in the Site Description (Section 2.1.2). Visual character is described in terms of form, line, color, texture, and patterns. These terms are used to express visual quality found in several landscape components: landform, rock form, vegetation, water forms (lakes and streams), and human-made development. Each segment description is concluded with summary ratings of “High”, “Moderate”, or “Low” corresponding to baseline assessments of Visual Quality (VQ) and Visual Sensitivity (VS).

Segment 1- MP 0 to 8.15 (Utility corridor in urban and rural residential setting): The pipeline begins in a wooded urban and rural residential area in southern Snohomish County and is routed in an easterly direction along a clear-cut BPA power line corridor. Overall visual quality is considered high due to gently rolling topography and a diversity of vegetation types, including mixed forest (deciduous/coniferous), hay/pasture land, landscaped areas, and palustrine wetlands. Vegetation exhibits a variety of patterns and textures, and colors throughout the year. Viewer types, and corresponding viewer sensitivities, are wide ranging and include residents, agricultural workers, local travelers, industrial/commercial workers (MP 3), and recreationists (golf course, MP 5). Most views are intermittent due to screening by vegetation, but views down the corridor are present at several highway and rural road crossings. Overall, visual sensitivity is considered high since the majority of potential viewers are residents. (VQ=moderate; VS=high)

Segment 2 - MP 8.15 to 9.3 (Utility corridor in agricultural setting): Visual features within this segment consist of stream vegetation growing along the Snoqualmie River and a uniform hay/pasture field in the river floodplain. Other than agricultural workers who occasionally work in the area, there are few potential viewers in this segment. (VQ=moderate; VS=moderate)

Segment 3 - MP 9.3 to 11.9 (Utility corridor in rural residential/forest setting): Visual conditions within this segment are similar to Segment 1, but less diverse. Vegetation mainly consists of mixed forest, patches of hay/pasture, herbaceous grass/forbs, and patches of regenerating second-growth forest. The overall number of viewers within this segment is low. (VQ=moderate, VS=moderate)

Segment 4 - MP 11.9 to 13.0 (Forest and rural residential setting): At MP 11.5, the pipeline route departs from the BPA corridor and crosses regenerating young forest and enters a rural residential area for a short distance. Some tree cutting is expected within this segment. Vegetation within this segment consists of mixed forest, regenerating coniferous forest, and palustrine wetlands. Some vegetation variety and patterning is present, most notably after MP 12. Potential viewers would be local travelers on West Lake Kayak Road and Kayak Lake Road, but the overall number of viewers is expected to be low. (VQ=moderate, VS=moderate)

Segment 5 - MP 13.0 to 21.00 (Utility corridor in rural residential setting): The pipeline route in this segment follows the BPA power line corridor through rural residential development in a mixed forest setting. Overall, vegetation is diverse and exhibits patterning of forest/open space patches. Residential densities range from 1 DU/10 ac to 1 DU/5 ac, but most residences do not directly view the BPA corridor. Momentary views of the pipeline route exist in locations where numerous residential roads cross the BPA corridor. (VQ= moderate, VS=high)

Segment 6 - MP 21.00 to 23.45 (Forest setting): In this short segment, the pipeline route leaves the BPA corridor and connects to a forest road. Vegetation consists of second- and third-growth forest, which

displays minimal patterning or species diversity. Clearing of trees will be required. There are few potential viewers in this general area other than power company or forest products company personnel performing maintenance activities. Where the route moves onto the forest road (Forest road in regenerating forest setting), the pipeline follows a private forest road through second- and third-growth forest. Visual quality is considered low because this segment is characterized by uniform, regenerating coniferous forest which displays little visual patterning or species diversity. Views are confined to the road corridor which is much more narrow than the power line corridor of the prior segments. Potential viewers include forest company personnel and a few local residents using the road to access properties, but the size of the viewer group is small. (VQ=low, VS=moderate).

Segment 7 - MP 23.45 to 25.20 (Mixed forest and river crossing setting): This segment cuts across a scenic forest area before rejoining another private forest road. Visual quality within this segment is high because of topographic variation which slopes down to meandering Tolt River, and a mosaic of diverse vegetation (coniferous forest, mixed forest, a patch of hay/pasture cover, riparian growth along the river, and patches of palustrine wetland) which provides a variety of visual patterns, textures, and colors. Viewers include a few rural residents located near the river, local travelers on Tolt River Road NE, and recreationists using Tolt River. Visual changes to the wooded slopes on either side of the river would be visible and evident. (VQ=high; VS=high)

Segment 8 - MP 25.20 to 25.9 (Forest road in regenerating forest): Within this segment, the pipeline route follows a private road through clearcuts and regenerating forest of generally low visual quality. Primary viewers are forest company personnel and local travelers. (VQ=low; VS=moderate)

Segment 9 - MP 25.9 to 26.8 (Utility corridor through forest setting): The pipeline route rejoins the BPA utility corridor through clearcut forest of uniform pattern and minimal visual interest. Potential viewers are limited to power company personnel maintaining the corridor. (VQ=low; VS=low)

Segment 10 - MP 26.8 to 27.15 (Utility corridor in forested creek crossing): Visual quality within this short segment of the BPA corridor is slightly higher than segments 10 and 12, because of more diverse topography and vegetation along Griffin Creek. Some additional forest clearing will be required between transmission towers on the north and south sides of the creek. There are few potential viewers along this section of Griffin Creek. (VQ=moderate; VS=low)

Segment 11 - MP 27.15 to 28.05 (Utility corridor in regenerating forest setting): This segment follows the BPA right-of-way which passes through uniform regenerating forest land of generally low visual quality. An unimproved road meanders in the BPA corridor, but the potential number of viewers using this road is expected to be small. (VQ=low; VS=low)

Segment 12 - MP 28.05 to 31.7 (Road corridor through forest/rural residential, industrial setting): The

pipeline route follows a logging road through coniferous forest interspersed with palustrine vegetation, and patches of regenerating forest of generally low visual quality. (VQ=low; VS=low)

Segment 13 - MP 31.7 to 32.1 (Forest and rural residential): The corridor passes through a rural residential area and crosses Tokul Creek. Viewers include a few rural residents, local travelers and forest workers. Visual changes to the wooded slope will be visible. (VQ=moderate; VS=moderate)

Segment 14 - MP 32.1 to 33.7 (Rural road through rural residential/industrial setting) At MP 31.1, the route follows a county road (396th Avenue) adjacent to rural residential development on the east side, and a rock quarry and the Weyerhaeuser sawmill on the west side. No trees are expected to be cut along the road. Near MP 33.6, the pipeline departs from the road and slips down a vegetated slope to join a railroad bed (Cedar Falls Trail) in a palustrine wetland of the Snoqualmie River. Visual quality along the entire segment is varied, but is overall assessed as “moderate”. Viewer types are also highly varied: residents, quarry/sawmill workers, local travelers, and recreationists using the Snoqualmie River. Most residences are over 1,000' from the pipeline route and views are interrupted by vegetation. The primary viewers will be travelers along the county road undergoing visual disturbance. (VQ=moderate; VS=moderate)

Segment 15 - MP 33.7 to 41.05 (RR corridor through residential and commercial area): This segment is the most visually diverse of the entire pipeline route. Overall, scenic quality is high and potential viewers are varied. The segment follows a railroad bed (Cedar Falls Trail) across the Snoqualmie River (MP 34), runs adjacent to the Mount Si Golf Course (MP 35), passes through King County Open Space, passes through the City of North Bend (MP 36+), runs adjacent to a school/play fields (MP 36.8) and regional business/industrial parcels, crosses I-90 and the south fork of the Snoqualmie River, passes through a wooded residential area (MP 39.2), and then rounds a wooded hillside (adjacent to I-90), and crosses Boxley/Christmas Creek. Deciduous and evergreen vegetation along this segment is extremely diverse and displays a mosaic of colors, sizes, patterns, and textures throughout the year. Most of the topography is flat up to MP 39.2, where the route enters foothills. The meandering Snoqualmie River and creeks enhance the visual quality of this segment. Overall, visual quality for the route segment is assessed as “high”. Viewer types are diverse in this segment: residents, recreationists (golfers, river users, trail hikers, etc.), regional and local travelers, industrial/commercial workers, and agricultural workers. Potential views exist where local roads cross the railroad bed/pipeline route and from higher overlook locations like recreational trails leading up to Mount Si. (VQ=high; VS=high)

Segment 16 - MP 41.05 to 42.5 (Forest and rural residential setting): After departing from the railroad bed, the pipeline route cuts through some coniferous trees, follows a county road for approximately 1,500', and then traverses up a wooded slope adjacent to Twin Falls State Park (MP 41.7 to 41.9) to connect with the John Wayne Trail (abandoned railroad bed). Visual quality along this segment is moderate (common). Potential viewers of the clear-cut portions of the route include rural residents (foreground view range) and regional travelers along I-90 having views (middle ground view range) of the corridor to be cut on the

forested slope. Visibility of the pipeline corridor by recreationists at Twin Falls State Park is expected to be screened by forest cover. (VQ=moderate; VS=high)

Segment 17 - MP 42.5 to 43.9 (Recreational trail in mountainous forest setting): The pipeline route follows the elevated John Wayne Trail (JWT) which runs along a steep mountain slope which parallels I-90. Topography is visually dramatic, but vegetation is mainly uniform coniferous forest. Viewers will be recreational hikers and mountain bikers who are following the heavily used trail. Because the trail is surrounded by forest on both sides, and is up-slope from I-90, no views are expected from the highway. (VQ=moderate; VS=high)

Segment 18 - MP 43.9 to 45.9 (Recreational trail/road in a mountainous forest setting): In this segment, the pipeline route enters the Mt. Baker-Snoqualmie National Forest. This area of the forest is managed under the VQO classification of "Scenic Forest" in which forest activities are to "retain or enhance viewing and recreational experiences." At MP 43.8, the pipeline route temporarily leaves the JWT, and travels down slope to follow the ditch-line of a paved county road (Homestead Road). The road is adjacent to Olallie State Park which receives much day use and overnight camping. Visual quality along this segment is high because of the steep mountains on either side of I-90, patterned forest, and a meandering river that runs through the canyon. Recreational users accessing the park will have views of pipeline construction. Because the pipeline route and I-90 are at similar elevations, and are separated by dense forest, views by regional I-90 travelers along Olallie State Park will be screened. (VQ=high; VS=high)

Segment 19 - MP 45.9 to 48.9 (Forest logging road in a mountainous forest setting): Near MP 46, the pipeline follows an up slope road, and reconnects to the elevated John Wayne Trail screened from I-90 views. Primary viewers along the entire segment consist of recreationists having high visual sensitivity. (VQ=high; VS=high)

Segment 20 - MP 48.9 to 50.7 (Recreational trail in a mountainous forest setting): The pipeline route continues along the JWT until approximate MP 48.9, where it descends and cuts through a forested slope to connect to Tinkham Road (Forest Service). Visual quality is the same as Segment 18. For the first portion of this segment, viewers are trail users. Steep mountain slopes on either side of I-90 are topographically dramatic, but vegetation cover is mainly uniform coniferous forest. Regional travelers on I-90 will have potential views of the corridor cut on the forested slope (foreground to middle ground view range). (VQ=moderate; VS=high)

Segments 21 - MP 50.7 to 54.9 (Forest road in a mountainous forest setting): Along this segment, the pipeline will be routed down graveled Tinkham Road (Forest Service). The road corridor is approximately 20' wide, and there will be no tree removal. The road passes by Tinkham Campground (Forest Service) near MP 51. Before reaching the parking lot of the Asahel Curtis Interpretive Trail and the Annette Lake trailhead (north of Humpback Creek), the pipeline departs Tinkham Road and cuts up slope to join the

BPA power line corridor. Visual quality of the area is considered high due to steep topography, patterned coniferous forest mixed with patches of deciduous trees, and the meandering Snoqualmie River, Alice Creek, and Humpback Creek. Viewers consist of recreationists using Tinkham Campground and the Curtis/Annette Lake trailhead. On the weekend, 300-400 people use the trailhead, and parking often extends along Tinkham Road. (VQ=high; VS=high)

Segment 22 - MP 54.9 to 56.2 (Utility corridor in mountainous forest setting): In this segment, the pipeline cuts up slope to join and follow the BPA power line corridor for a short distance before cutting up slope again to rejoin the JWT. Visual quality along this segment is moderate (common). The two short forest cuts are expected to be visible from I-90 and the JWT. (VQ= moderate; VS=high)

Segment 23 - MP 56.2 to 56.7 (Recreational trail in mountainous forest setting): This segment follows the elevated JWT through coniferous forest interspersed with large patches of regenerating forest. Viewers are trail users. (VQ=moderate; VS = high)

Segment 24 - MP 56.7 to 59.0 (Snoqualmie tunnel): This segment along the JWT enters an abandoned railroad tunnel. There are no views within the tunnel so visual quality is low. Viewers are confined to recreationists within the tunnel. (VQ=low; VS=high)

Segment 25 - MP 59.0 to 73.35 (Recreational trail in a mountainous forest setting): After emerging from the Snoqualmie tunnel, the pipeline route continues to follow the JWT through a mountain planned unit development, the Hyak ski area, and then travels along the scenic shoreline of Keechelus Lake. This segment is located in the Wenatchee Forest. Within this segment, the pipeline crosses areas managed under VQO classes as “Scenic Travel--Retention (ST-1)”, “Scenic Travel - Partial Retention (ST-2)”, “Riparian Zone (EW-2)”, and “General Forest (GF)”. Under the “Retention” Visual Quality Objective, developments and forest management activities are generally not visually apparent in the foreground and middle ground from developed recreation sites and designated roads and trails. In “Partial Retention” areas, visual changes are to appear as “near natural” (evident, but compatible) in the foreground and middle ground along scenic travel corridors.

Visual quality in this portion of the segment is considered high. Potential viewers are diverse: commercial workers, regional travelers along I-90, and a variety of recreational participants (hikers, mountain bikers, skiers, etc.). Travelers along I-90 will have middle ground views across Keechelus Lake of pipeline construction. (VQ=high; VS= high). After MP 64, the pipeline route travels through a patchwork mosaic of coniferous and regenerating forest. Visual disturbances are also present by many clear-cut utility corridors which criss-cross the area. Viewers in this area are mainly recreationists following the JWT and forest company/utility personnel. (VQ=moderate; VS=high).

Segment 26 - MP 73.35 to 75.8 (Forest setting): In this segment, the route departs the JWT, and heads



cross-country through areas of mixed forest, regenerating forest, and palustrine wetlands. The area visually displays many utility and commercial forestry scars. Some amount of tree clearing would be necessary to construct and maintain the pipeline. This area is fairly remote and potential viewers are primarily forest products company/utility personnel. (VQ= moderate; VS=low)

Segment 27 - MP 75.8 to 98.9 (Utility corridor in a forest, dry land farming, and rangeland setting): Most of this segment follows a very wide (over 500'), 4-line BPA utility corridor which passes through visual settings of commercial forest, dry land farming, and rangeland. The first portion of the segment (MP 74 to 89) passes through commercial forest land that is highly patterned and interspersed with regenerating forest and patches of rangeland. Numerous unimproved roads cross the utility corridor. Between MP 83.5 and 85, the pipeline route temporarily departs from the BPA corridor and cuts through regenerating forest and small patches of undisturbed forest. The only anticipated viewers in this fairly remote area would be forest company and BPA personnel. (VQ= moderate; VS=low). In the next portion of the segment (MP 90.8 to 97), the visual setting north of the BPA corridor changes to forest interspersed with fields of dryland farming. Near MP 95.8, the pipeline route crosses under I-90, travels down a steep slope, crosses a recreation trail (hikers, horse-drawn buckboards, etc.), crosses the Yakima River, crosses Highway 10, and then ascends up a steep slope. Viewers along this portion of the segment include forest company/utility personnel, agricultural workers, local and regional travelers, and recreationists. Travelers on the recreational trail and Highway 10, in addition to recreationists on the Yakima River, would have views of the vegetation and soil disturbances on the steep slopes facing the river. (VQ=moderate, high between MP 96.8-97.8; VS=high). After crossing the Yakima River and ascending the steep eastern slope, the pipeline route travels through a visual setting of rangeland supporting scrub steppe vegetation. (VQ=low; VS=low).

Segment 28 - MP 98.9 to 100.4 (Creek crossing in rangeland setting): In this short segment, the pipeline route follows the BPA corridor and crosses Swauk Creek which flows through a steep scenic canyon supporting sensitive oak habitat. Except for occasional recreationists, there are few anticipated viewers within this segment. (VQ=high; VS=moderate).

Segment 29 - MP 100.4 - 107.7 (Rangeland setting): This segment passes through hilly rangeland with little vegetation variety/patterns/textures, or presence of water features. Other than the crossing of Highway 97, there are few anticipated viewers in this segment. Travelers will have views of the scarred slope on the east side of the highway. (VQ=low; VS=low)

Segment 30 - MP 107.7 to 149.14 (Rangeland, irrigated farmland setting): After MP 105.5, the pipeline route departs the wide BPA corridor, and heads cross-country through pasture/rangeland and farm fields which are occasionally flood irrigated. Throughout the year, the fields display a variety of colors and textures. The route crosses numerous creeks supporting palustrine vegetation. The pipeline route passes near many farmsteads within the foreground view range (< 1/4 mile), and crosses many unimproved and

paved local roads. Near MP 121.6, the pipeline route passes near an offramp of I-90, south of Kittitas (small town), where the proposed terminal and booster station (Kittitas Terminal) will be located. After rejoining and running adjacent to the rejoining the JWT for a short distance (MP 122.4 to 124.4), the pipeline route passes through a visual setting of more agricultural land. There are three primary alternative routes from this point to the Columbia River crossing (MP 144.6): the proposed route would continue on the north side of I-90 across private land and undeveloped portions of the Ginko State Park land; the second and third alternative routes would be south of I-90. For the proposed north of I-90, the corridor would be located out of view of I-90 travelers (VQ=low; VS=low). Between MP 127.2 to 129.2, the pipeline route south of I-90 would follow the south side of I-90, and travelers are expected to see slope scarring when the route turns southeast and heads up a slope between MP 129.2 and 130.2. (VQ=moderate; VS=high).

The last portion of this segment (MP 129.2 to MP 144) passes through the Yakima Training Center. The landscape setting is hilly shrub steppe which extends for miles with few, if any, landscape features of visual interest. One alternative route would be located near the northern fenceline of the Yakima Training Center which would be within view of travelers on I-90, and then south along Hunsinger Road to a crossing at either Wanapum Dam or farther south at the Beverly Railroad Bridge. Travelers are expected to see slope scarring. (VQ=moderate; VS=high).

The second alternative route would be located farther to the south of I-90 and would head across land in a southeasterly direction. Primary potential viewers along this portion of the segment would be military personnel. (VQ=low; VS=low). The remaining portion of the segment passes near Getty's Cove private campground (located within 500' of the pipeline route) near MP 144.7, passes adjacent to the Wanapum Dam, and travels down a steep slope to the Columbia River. Slope scars are anticipated to be seen by recreationists using the river. (VQ=moderate; VS=high).

Segment 31 - MP 149.4 to 150 (Crossing of Columbia River): In this short segment, the pipeline route crosses the Columbia River. There are minimal vegetation and visual features along the river banks. The proposed construction method and crossing location is a horizontal directional drill south of Wanapum Dam. Since the proposed river crossing method will be by directional drilling, there will be no construction along the banks. (VQ=moderate; VS=high)

There are four other alternative construction methods and locations for crossing the Columbia River: dredging across the river north of the I-90 bridge; hanging the pipeline on the I-90 bridge; hanging the pipeline on the Wanapum Dam; and hanging the pipeline on the Beverly Railroad Bridge which is downstream from Wanapum Dam. The dredged crossing north of the I-90 bridge would include construction along the banks. Slope scars are anticipated to be seen by recreationists using the river. (VQ=moderate; VS=high). Installing the pipeline on the side of the existing I-90 bridge or the Beverly Railroad bridge would be seen by recreationists using the river; however the visual quality of the river of

the bridges is low and would not be further degraded by the existence of the pipeline along the side (VQ=low; VS=high).

Segment 32 - MP 150 to 151.8 (Rangeland setting): On the east side of the Columbia River, the pipeline route would be determined by the selected crossing location for the Columbia River. If the dredged crossing north of the I-90 bridge is selected, the route would be located along the river bank to the west of I-90 and would turn south to the intersection of I-90 and Highway 243. Slope scars are anticipated to be seen by recreationists using the river. (VQ=moderate; VS=high). The pipeline from either the dredged crossing or the I-90 bridge crossing would then be located on the east side of Highway 243. Slope scars would be visible to travelers on the roadway (VQ=low; VS=moderate). At the intersection with Highway 26, the pipeline would turn to the southeast and diagonally cross rangeland until it reaches the Beverly Burke Pump Station. (VQ=low; VS=low). The directional drill route south of Wanapum Dam will cross Highway 243 and travel up a slope located 1/2 mile east of highway. The route utilizing the Beverly Burke Railroad Bridge would be located adjacent to Highway 243 for approximately 1/4 mile and then cross rangeland in a north/northeasterly direction until intersecting with Highway 26. Visual features are similar to Segment 29. (VQ=low; VS=moderate)

Segment 33 - MP 151.8 to 221.15 (Agricultural setting): This segment beginning at MP 151.8 is the longest continuous segment of one general land use. The route travels for miles through a visual setting of irrigated farmland (center pivot) and grazing land. The route parallels the north side of Beverly Burke Road (MP 152 to 158), passes through light industrial areas of Royal City (small farm town, MP 163 to 164), follows the south side of paved Highway 26 (MP 169.4 to 176), passes cross-country near the Columbia National Wildlife Refuge, and then passes through agricultural fields. From MP 182 to the end of the segment (MP 221.15), the route follows section lines or cuts across agricultural fields. In numerous locations, the route passes directly adjacent to, or goes around, clustered farmstead buildings. The route also crosses many unimproved and paved country roads. Visual quality along this segment is considered moderate due to topography that alternates between rolling hills and flat agricultural land, and a wide variety of vegetation types, colors, patterns, and textures throughout the year. Primary viewers include farm residents and local travelers. (VQ=moderate; VS=moderate)

Segment 34 - MP 221.15 to 227.5 (Agricultural setting): This segment follows an existing BPA transmission line ROW which travels through a setting of irrigated agricultural fields and crosses Highway 395 and several roads. (VQ=moderate; VS=low)

Segment 35 - MP 227.5 to 231.04 (Agricultural, Urban industrial setting): This segment follows section lines through agricultural fields, enters an industrial area within the Pasco city limits and crosses Highway 12 and some local roads. Visual character is similar to segment 34. Potential viewers include limited farm residents, travelers, and industrial workers at the Northwest Terminalling Company storage facility. (VQ=moderate, VS=low).

## **Pump Stations**

Six pump stations will be located along the pipeline route. Visual conditions of each pump station site, and potential viewers, greatly vary.

Thrasher Station (Segment 1, MP 0): The site will be located adjacent to a Puget Power right-of-way. Visual quality in the area is considered moderate due to rolling topography and fairly diverse vegetation providing a range of colors, patterns, and visual textures. Primary viewers near the pump station include residents, but surrounding forest will screen most views of the site (< 1 ac). (VQ=moderate, VS=high)

North Bend Station (Segment 15, MP 35.25): This site is located in an urban land parcel located between the Cedar Falls Trail (abandoned railroad) and the North Bend Ranger Station of the U.S. Forest Service. The site is located near an existing electrical substation and is visually screened from the Cedar Falls Trail by an undeveloped vegetated (blackberry bushes) parcel of land approximately 40 feet in width. The land to the east of the site is zoned from multi-family development, although the site is currently undeveloped. The most sensitive viewers will be recreationists following the Cedar Falls Trail, however the vegetation between the trail and site will screen most but the upper height views of the site. (VQ=low; VS=high)

Stampede Station (Segment 26, MP 67.1): This station will be located in a partially cleared forest meadow in which some tree clearing may be required. Visual quality within this area of the Wenatchee forest is moderate and primary viewers will be recreationists using the John Wayne Trail, and forest products company personnel. (VQ=moderate; VS=high)

Kittitas Station (Segment 30, MP 124): The Kittitas pump station site is located in open, irrigated agricultural land next to an I-90 offramp. Primary viewers will be a high volume of travelers along I-90 which view the site from a foreground range (< 1/4 mile). (VQ=moderate; VS=high)

Beverly-Burke Station (Segment 33, MP 154.1): Located in rangeland not currently cultivated, some brush clearing will be required to construct the pump station. The land surrounding the site is cropland and shrub steppe rangeland having moderate visual quality. Primary viewers will be a few local travelers along Beverly Burke road. (VQ=moderate; VS=low)

Othello Pump Station (Segment 33, MP 189.85): The Othello Pump Station is located 1 mile north of Highway 24 at the corner intersection of McKinney Road and a minor dirt road. Visual conditions and viewer types are similar to the Beverly Burke Station. (VQ=moderate; VS=low)

## **Kittitas Terminal**

The Kittitas Terminal will be constructed on a 27-acre site currently used for irrigated agriculture north of Interstate 90 and east of Badger Packet Road. Although the site is flat, overall visual quality of the site is moderate due to the variety of colors, patterns, and textures present throughout the year in an area of agriculture. Viewers traveling west on the interstate will have open views of the facility, but views when traveling east will be partially screened at close viewing ranges by fill slopes of the Badger Packet Road over crossing. Overlooking views will be particularly evident for travelers exiting on the offramp and headed for Kittitas. The most visually prominent elements of the facility will be light colored, 48' high petroleum storage tanks (see Visual Simulations, Figures 5.1.2 and 5.1-3). A 5' high berm will surround the tank area, but it will not provide much visual screening due to the lower elevation of the site relative to the offramp located on fill. Viewers will also see truck tanker unloading facilities, and various pumping equipment and above ground piping. Secondary viewers will include agricultural workers. (VQ=moderate; VS= high).

FIGURE 5.1-2 - EXISTING VIEWPOINT - KITTITAS TERMINAL

FIGURE 5.1-3 - SIMULATED VIEWPOINT - KITTITAS TERMINAL

### 5.1.4.3 Visual Impacts

Visual impacts of the pipeline will be most noticeable during construction of the pipeline when viewers will observe corridor clearing (where necessary), trenching operations, placement of pipe sections, backfilling/compaction operations, and vegetation seeding and restoration procedures. After construction, visual impacts will depend on the amount of visual contrast created by trench scars relative to the amount and type of vegetation that was removed, local conditions affecting revegetation (slope steepness, soil type, rainfall, etc.), and the exposure of viewers to the pipeline route. Criteria used to assess visual impacts are presented in Table 5.1-3.

Because visual conditions vary highly within route segments, visual impacts will first be discussed relative to general landscape settings:

Pipeline Routed in a Utility Corridor: Much of the pipeline route follows existing utility corridors where visual impacts will be low. The BPA corridors are typically several hundred feet wide and little new clearing of trees will be required. The growth of trees and large shrubs are limited within these maintained corridors, so pipeline trenching scars will likely return to grass and small shrubs within a few years and not be noticeable within the larger corridor.

In forested areas, views of utility corridors will generally be screened by vegetation unless roads or trails cross the corridor. At these infrequent locations, views will be linear and perpendicular to the direction of travel, so views will be of short duration and the overhead power line structures will likely be the focus of visual attention. Visual impacts created by eroding trench scars may be visible where the utility corridor traverses steep slopes that are visible above surrounding vegetation. In some locations, visual impacts will result from short clear-cut sections through forests where the pipeline route is connecting to utility or road corridors.

**TABLE 5.1-3**  
**VISUAL IMPACT CRITERIA**

**TABLE 5.1-3 (CONTINUED)**  
**VISUAL IMPACT CRITERIA**

<b>Component</b>	<b>Low Impact</b>	<b>Moderate Impact</b>	<b>High Impact</b>
Visual Contrast	Pipeline corridor construction or widening creates minimal visual contrast in terms of color, pattern, or texture with the surroundings. Routing follows existing utility corridors and vegetation is minimally disturbed.	Pipeline corridor construction or widening creates some visual contrast in terms of color, pattern, or texture with the surroundings. Partial clearing of mature and large vegetation is necessary for corridor routing or widening. Corridor edges, or construction staging areas, display some irregularity or vegetation “feathering”. Corridor routing responds, at least partially, to topography or vegetation patterns.	Pipeline corridor creates high visual contrast in terms of color, pattern, or texture with the surroundings. Corridor clearing or widening will remove much mature and large vegetation, most notably trees. Corridor edges appear linear and regular. Corridor routing does not conform to topography or vegetation patterns.
Scarring Recovery Time (Short-term vs. Long-term)	Trenches and construction staging areas undergoing restoration are expected to visually recover within 1-2 years. At a minimum, grass cover is expected.	Trenches and construction staging areas undergoing restoration are expected to visually recover within 2-3 years. At a minimum, grass cover is expected.	Trenches and construction staging areas are expected to show long-term scars (> 3 yrs) in which re-establishment of vegetation will be slow due to slope steepness, soil conditions, rainfall, etc.
Permanency of Alteration (Temporary vs. Permanent)	Construction scars are expected to be temporary. On-going corridor maintenance imposes no restrictions on the type of vegetation to be re-established (typically applies to grasslands/agricultural fields)	Construction scars are expected to be permanent in some areas. On-going corridor maintenance will limit the growth of large shrubs/trees (typically applies to mixed rangelands/forested areas)	Construction scars are expected to be permanent in most areas. On-going corridor maintenance will limit the growth of large shrubs/trees which creates permanent visual contrast (typically applies to forested areas)
<b>Viewer Exposure</b>			
Degree of Visibility	Most views of corridor/ facilities are blocked by landform or vegetation	Most views of corridor/ facilities are partially blocked by landform or vegetation	Most views of corridor/ facilities are open. Corridor segments may be in locations of visual prominence (hillside slope adjacent to highway, highway interchanges, etc.)
Viewing Distance	For most viewers, corridor/ facilities are a background element (> 3 mi)	For most viewers, corridor/ facilities are a middle ground element (1/4 - 3 mi.)	For most viewers, corridor/ facilities are a foreground element < 1/4 mi.)
View Duration/Frequency	Most viewers have infrequent views of the corridor/facilities or views are of short duration	Most viewers have semi-frequent views of the corridor/ facilities or views are of moderate duration	Most viewers have frequent views of potentially long



**TABLE 5.1-3 (CONTINUED)**  
**VISUAL IMPACT CRITERIA**

<b>Component</b>	<b>Low Impact</b>	<b>Moderate Impact</b>	<b>High Impact</b>
	(e.g. regional travelers)	(e.g. public golf courses, etc.)	duration (e.g. residents, etc.)
Viewer Group Size (related to viewer sensitivity)	Viewer group is comparatively small (<50) on a daily basis (e.g. travelers using rural/unimproved road, etc.)	Viewer group is moderate in size (50-100) on a daily basis (e.g. public gathering sites, etc.)	Viewer group is comparatively large (>100) on a daily basis (e.g. heavily traveled state highway, etc.)
Viewer Sensitivity (see Viewer Types, Section 5.1.4.1)	Typical viewers have low sensitivity to visual changes (e.g. industrial workers, work commuters, etc.)	Typical viewers have moderate sensitivity to visual changes (e.g. public facility workers, commercial areas, agricultural workers, local travelers)	Typical viewers have high sensitivity to visual changes (e.g. residents, recreationists, recreational travelers)

Pipeline Routed Through Residential Areas: At several locations along the route, the pipeline passes through suburban or rural residential areas, such as Woodinville and North Bend. In general, visual impacts in these areas are considered moderate. Residential viewers have high view sensitivity, but since the route is typically following power line or old railroad corridors, visual disturbances will not be seen unless crossing the corridors or elevated residences, public gathering sites (schools, etc), and commercial/industrial sites have overlooking views. Many of the areas are also wooded, so vegetation is anticipated to provide partial screening of construction activities. Visual impacts will be temporary, and construction scars are expected to recover within two to three years.

Pipeline Routed Along Recreational Trails: For approximately 28 miles, the pipeline route follows the Cedar Falls Trail and the John Wayne Trail. For most of this distance, the visual setting is mountainous terrain of moderate to high visual quality. These trails also receive heavy use by hikers, mountain bikers, nature observers, and other recreationists having high visual sensitivity. Construction of the pipeline will pose temporary, but high, visual impacts to recreationists using these trails. In addition to visual impacts, trenching operations will physically restrict trail use and temporarily block access to adjacent campgrounds and trailheads. Although tree cutting will be minimized, soil stockpiled on one side of the trench would cover herbaceous plants and partially extend into adjacent trees where the trail corridor is narrow. Because the trails are exposed soil, the duration of visual impacts would be short. Disturbed vegetation within the trail corridors is expected to recover in one to two years.

Construction of the pipeline along recreational trails, will temporary exceed the Visual Quality Objectives of “Retention” and “Partial Retention” within the Mt. Baker-Snoqualmie and Wenatchee National Forests. Not only will visual changes be evident in the foreground, sections of the trails will be temporarily closed during construction. Many of the forest cuts on slopes connecting the pipeline route between trails and utility corridors will be also be visible in the middle ground (1/4 to 3 miles) from primary scenic travel corridors like I-90. For both “Retention” and “Partial Retention” areas, these short clear-cut connections will exceed the Forest Service visual objectives, but some impact reduction and visual blending can be achieved through mitigation measures (see Section 5.1.4.4).

Pipeline Routed Along Forest Roads: Many miles of the pipeline will be routed along forest company or U.S. Forest Service roads. Along forest company roads like Segment 7, visual impacts are anticipated to be low. Forest company roads pass through large acreages of regenerating forest in which the extent and area of visual disturbances to the natural setting is already significant. Construction of the pipeline within the road corridor will pose little additional visual contrast within the setting, and residual scarring will be minimal. The number of viewers is also relatively small and primarily consists of forest company personnel who have lower visual sensitivity compared to residents and recreationists. Along other segments like Tinkham Road (Segments 18 & 19) maintained by the Forest Service, visual impacts during construction will be moderate to high. The road corridor is narrow (18-20'), and some degree of disturbance to coniferous vegetation may occur, although no tree cutting is planned. The road is heavily used by visually sensitive recreationists who are accessing campgrounds and trailheads. The duration of visual impacts, however, will be short-term, and permanent scarring will be minor, other than where connections occur between the road and the BPA utility corridor.

Impacts relative to Visual Quality Objectives will be the same as described in "Pipeline Routing Along Recreational Trails". The impacts of greatest concern will be the short connector clear-cuts along Tinkham Road.

Pipeline Routed Through Rangeland: A long portion of the pipeline is routed through a visual setting of rangeland like the landscape north of I-90 in the area west of the Columbia River. Visual impacts within the rangeland setting are expected to be low. Temporary visual contrast will consist of a linear trench scar of exposed soil routed across rolling topography of grass and low shrubs. The rangeland setting has lower rainfall than other settings, so the scars may take several years to revegetate with grass, but scarring will not likely be permanent or evident. Much of the rangeland is more remote than other landscape settings, and few viewers will see the scarring except where the route parallels highways. At these locations, visual impacts would be moderate due to land scarring which would be slow to recover and would not be screened from view by vegetation. A simulation depicting the impacts at these infrequent locations was therefore prepared (Figure 5.1-4).

FIGURE 5.1-4 - EXISTING AND SIMULATED VIEWS OF PIPELINE RIGHT-OF-WAY  
THROUGH RANGELAND

Pipeline Routed Through Agricultural Land: The last portion of the pipeline route runs cross-country across agricultural land, usually along section lines or dirt roads. Because the fields are routinely tilled, temporary visual disturbances caused by trenching will generally be visually compatible with the agricultural context of this setting. Many of the fields are irrigated, so trenching scars are expected to recover within one year or less. Moderate visual impacts will be created where the route passes adjacent to farm buildings at close viewing ranges, or runs along dirt roads.

Visual impacts, generalized for each route segment, are summarized below:

**TABLE 5.1-4**  
**SUMMARY OF VISUAL IMPACTS PER PIPELINE ROUTE SEGMENT**

**TABLE 5.1-4 (CONTINUED)**  
**SUMMARY OF VISUAL IMPACTS PER PIPELINE ROUTE SEGMENT**

Segments	Existing Conditions		Visual Impacts		Comments
	Visual Quality	Visual Sensitivity	Impacts During Construction	Impacts After Restoration	
1	M	H	M	L	Varied and sensitive viewers; screened views; some shrub clearing; impacts to Echo Falls Country Club
2	M	M	L	L	Limited view exposure; some shrub clearing within BPA corridor
3	M	M	L	L	Limited view exposure; patches of regen. forest; some shrub clearing
4	M	M	M	L	Limited view exposure; disturbed setting; some tree clearing
5	M	H	L	L	Limited view exposure; some shrub clearing within BPA corridor
6	L	M	L	L	Some view exposure; disturbed setting; disturbance to forest road
7	H	H	H	M	Scenic setting; moderate view exposure; tree cuts on creek slopes
8	L	M	L	L	Limited view exposure; disturbed surroundings; disturbance to forest road
11	L	L	L	L	Limited view exposure, disturbed setting; disturbances to forest road
12	M	L	M	M	Limited view exposure; some tree clearing on creek slopes
13	L	L	L	L	Limited view exposure; disturbed setting; some shrub clearing in BPA cor.
12	L	L	L	L	Limited view exposure; disturbed setting
13	M	M	M	L	Cuts on forested slopes, moderate view exposure
14	M	M	M	L	Moderate view exposure to sawmill workers/residents; disturbances to county road; short impact duration
15	H	H	H	L	High view exposure to trail users/some residents; short impact duration; impacts to Cedar Falls Trail, Mount Si Golf Course
16	M	H	H	H	Cuts on forested slopes; high viewer exposure to residents & I-90 travelers
17	M	H	H	L	Visual impacts to John Wayne Trail (heavily used); short impact duration
18	H	H	H	L	Visual impacts to Olallie State Park recreationists; short impact duration

**TABLE 5.1-4 (CONTINUED)**  
**SUMMARY OF VISUAL IMPACTS PER PIPELINE ROUTE SEGMENT**

Segments	Existing Conditions		Visual Impacts		Comments
	Visual Quality	Visual Sensitivity	Impacts During Construction	Impacts After Restoration	
<b>19</b>	H	H	H	M	Minor cuts on forested slope; disturbances to forest road
<b>20</b>	M	H	H	H	High view exposure to JWT users and I-90 travelers
<b>21</b>	H	H	H	M	Visual disturbances to Tinkham road/recreationists; tree cuts to connect
<b>22</b>	M	H	M	M	Some cuts on forested slope for BPA connection; some viewer exposure
<b>23</b>	M	H	H	L	Visual impacts to John Wayne Trail (heavily used); short impact duration
<b>24</b>	L	H	H	L	Temporary visual disturbances/JWT closure through Snoqualmie tunnel
<b>25</b> < MP 62.5 >MP 62.5	H M	H H	H H	L L	Potential views from Hyak Ski Area Visual impacts to JWT users; diverse viewers in area; short impact duration Visual impacts to JWT users; short impact duration
<b>26</b>	M	L	M	M	Some tree clearing; disturbed setting; limited view exposure
<b>27</b> < MP 95 MP 95-96 >MP 96	M M L	L H L	M H L	L M L	Some tree cutting, but mostly within BPA corridor; limited view exposure Visible disturbances to slopes along Yakima River; diverse viewers Rangeland scarring; moderate recovery time; limited view exposure
<b>28</b>	H	M	M	M	Oak cuts on slope of Swauk creek; permanent scars, limited view exposure
<b>29</b>	L	L	L	L	Rangeland scarring; mod. recovery time; limited views except MP 101.6
<b>30</b> N. of I-90 S. of I-90 <MP 127 YTC fenceline >MP 127 YTC rangeland >MP 127 >MP 142.5	L M M L M	L H H L H	M M M M L	L L L L L	Short impacts to farmland; rangeland scarring; limited view exposure Many road/creek crossing; diverse viewers; short impacts to farmland Rangeland scarring; mod. recovery time; scarring visible to I-90 travelers Rangeland scarring (Yakima Military area); mod. recovery time; lim. views
<b>31</b> <b>Dredging</b> <b>I-90</b>	M L	H H	M L	L L	Dredging north of I-90 Bridge Installing pipeline on side of I-90 Bridge

**TABLE 5.1-4 (CONTINUED)**  
**SUMMARY OF VISUAL IMPACTS PER PIPELINE ROUTE SEGMENT**

Segments	Existing Conditions		Visual Impacts		Comments
	Visual Quality	Visual Sensitivity	Impacts During Construction	Impacts After Restoration	
Bridge HDDrill RR Bridge Wanapum Dam	M L L	H H H	L L L	L L L	Crossing of Columbia by directional drill Installing pipeline on side of Beverly Railroad Bridge Installing pipeline on side of Wanapum Dam
32 N. of I-90 I-90 to H 243 H 26 to Beverly Wanapum Dam Railroad Bridge	M L L L L	H M L M M	M M L M M	L L L L L	Scarring to slopes facing Columbia River; rec. viewers; limited vegetation Scarring to rangeland; limited viewers Scarring to slopes facing Columbia River; rec. viewers; limited vegetation Scarring to slopes facing Columbia River; rec. viewers; limited vegetation
33	M	M	M	L	Passes near many farm buildings, short recovery for scars in irrigated fields
34	M	L	L	L	Minimum disturbance in BPA corridor through ag. fields; res./hwy. viewers
35	M	L	L	L	Minimum disturbance to ag. fields/industrial area

Specific locations of moderate to high visual impacts, within the segments listed in Table 5.1-4, where permanent scarring of slope vegetation is expected in areas of moderate to high potential view exposure include:

- MP 22.7 to 23.6 (Segment 8) - Tolt River crossing
- MP 41.05 to 42.5 (Segment 16) - Short connector clearing of wooded slope adjacent to Twin Falls State Park; visible from I-90
- MP 45.9 to 48.9 (Segment 19) - Along JWT
- MP 48.9 to 50.7 (Segment 20) - Connector clearing between JWT and Tinkham Road
- MP 50.7 to 54.9 (Segment 21) - Connector clearing between Tinkham Road and utility corridor and clearing between utility corridor and JWT
- MP 54.9 to 56.2 (Segment 22) - Widening and clearing of existing logging road
- MP 95.5 (Segment 27) - West and east slope of Yakima River
- MP 98.9 to 100.4 (Segment 28) - West and east slope of Swauk Creek



## Visual Impacts at Pump Stations Locations

Thrasher Pump Station (Segment 1, MP 0): The pump station is located in a scenic wooded area with residential viewers of high visual sensitivity, but visual impacts are considered to be low due to existing screening. Shrub vegetation along the roadside would block views of the site from Maltby Road. Woodland vegetation would also block the majority of views from surrounding residences. The most visually sensitive residence is located at 4518 Maltby Road, approximately 250 feet to the west. According to field checking, it appears that a small portion of the pump enclosure building may be visible based on current site layout, but it could be screened by layout reconfiguration or planting additional vegetation (site layout has not been finalized). If the pump building was seen, it would be similar in visual character to other residential metal sheds and buildings in the area.

North Bend Station (Segment 15, MP 35.25): Visual impacts at this location are assessed to be low. The adjacent BPA substation establishes a semi-industrial context, and the pump station site is screened from the adjacent Cedar Falls Trail by a 40 foot-wide heavily vegetated (blackberry bushes) corridor which is under separate ownership. The land southeast of the pump station site has been rezoned from general commercial (CG) to multi-family, however the land is currently undeveloped. Future residential development southeast of the site may have close-range views of the facility depending upon the location of multi-family structures on the site. Visual impacts will be partially mitigated by enclosing the pumps in a building . A simulation was prepared to depict a conceptual substation layout and convey the approximate visual character of the project as seen from nearby residences (Figures 5.1-5 and 5.1-6).

Figure 5.1-5 North Bend Pump Station Simulated Viewpoint

Figure 5.1-6 North Bend Pump Station Simulated Viewpoint

Stampede Station (Segment 26, MP 67.1): Visual impacts are assessed to be low. The Stampede site is surrounded by heavy forested. Registration of the preliminary site layout plan on an aerial photograph of the site indicates that much screening would be provided by existing trees and shrubs. Additional vegetation screening could be planted, if needed. An open path from the substation to the power lines would need to be preserved, but is not expected to pose significant impacts considering the perpendicular travel direction of recreationists along the John Wayne Trail. Most visual attention would be directed to an existing communications building located north of the site at a visually prominent area.

Kittitas Station (Segment 30, MP 124): Because the Kittitas pump station is located in an open area having high view exposure along I-90, visual impacts are assessed as being “high”. A visual simulation was therefore prepared to approximately depict visual impacts (Figure 5.1-3).

Beverly-Burke Station (Segment 33, MP 154.1): The pump station is located adjacent to the paved Beverly-Burke Road at the corner of a center-pivot irrigated agricultural field. Visual impacts are rated as “moderate”. View exposure is moderate and limited to travelers along Beverly-Burke Road, but little vegetation screening would exist and the pumps would not be enclosed in a building. For these reasons, a simulation was prepared (Figures 5.1-7 and 5.1-8).

FIGURE 5.1-7 Beverly Burke Substation Existing Viewpoint

FIGURE 5.1-8 Beverly Burke Substation Simulated View

Othello Pump Station (Segment 33, MP 189.85) The pump station is located adjacent to an apple orchard and is bounded by dirt country roads on the north and west sides. Even though the site would not be screened, visual impacts are rated as “low” due to minimum traffic along adjacent roads.

### **Kittitas Terminal**

The Kittitas Terminal is assessed to impose high visual impacts. A visual simulation was prepared to depict expected impacts to the existing visual conditions at the Kittitas Terminal site (Figure 5.1-2 and 5.1-3). The simulation is an approximation based on preliminary engineering data, and the appearance of the as-built facilities may be subject to modification as engineering design is refined. Selection of the site for simulation was based on the long duration of changes (permanent), visual prominence of the high storage tanks and exposed pumping equipment, and lack of screening of the facilities as seen by a large number of travelers along I-90. Viewers traveling along the interstate would be sensitive to visual changes in a plains area supporting agriculture and animal grazing. An industrial looking facility would be visually in contrast with the agricultural appearance of the region.

### **Pipe Staging Areas and Contractor Construction Yard**

There will be views by local residents and travelers of stacked pipe being unloaded from rail cars at Pasco, Royal City, Ellensburg, and Easton. In addition, unscreened views will potentially exist of contractor construction yards containing office trailers, storage trailers, fuel tanks, and numerous vehicles. These impacts will be of short duration, and no permanent land scarring is expected.

#### **5.1.4.4 Mitigation Measures**

##### Pipeline Route

#### **Route Planning and Construction**

Construction of the pipeline will generally impose temporary visual impacts. Actions already considered to lower impacts to visual resources include:

- Minimize tree cutting and vegetation clearing by routing the pipeline within road and trail right-of-ways, and following existing utility corridors where possible (e.g. BPA). Trail and road users will be impacted, but the impacts will be temporary.
- Stockpile topsoil separately from subsoils and replace over the pipeline after installation to speed regeneration of vegetation using existing seed stock in the soil.

## **Operation**

- Permanent impacts in locations where the pipeline cuts through forested areas can be reduced by creating irregular edges to the corridor to avoid the appearance of a linear swath.
- In specific areas of high visibility like the slope cuts identified in Section 5.1.4.3, adjacent land outside the corridor right-of-way could be acquired for selective cutting to create a larger area for visual patterning.

### Pumping Stations and Kittitas Terminal

## **Construction**

No mitigation measures are proposed.

## **Operation**

- Visual impacts will be reduced by planting new, or additional, vegetation around the periphery of the facilities to provide visual screening. A mixture of trees and large shrubs (evergreen, deciduous, etc.) will be used to provide variety of sizes, colors, and textures throughout the year. Planting patterns will be irregular with areas of higher density to avoid a “hedge-row” appearance.

## **5.1.5 RECREATION**

Relationship of this project to existing parks and recreation facilities is discussed in Section 5.3 Public Services and Utilities.

## **5.1.6 HISTORIC AND CULTURAL FEATURES**

### **5.1.6.1 Introduction**

A cultural resources study was conducted in support of the Site Certification Application for the construction and operation of the proposed Cross Cascades Pipeline Project. This cultural resources study included background research, Native American consultation, and a field inventory of a sample of the proposed pipeline right-of-way. When possible, the results of the field inventory were used to evaluate the significance of cultural resources identified within the study areas.

The sample cultural resources inventory of the proposed Cross Cascades Pipeline route was done in late August and early September of 1995. Following a sampling design, field crews surveyed about 60 percent (approximately 152 miles) of the proposed pipeline route. During the course of fieldwork, 11 historic-period sites, four prehistoric sites, one multicomponent site, 124 historic-period isolates, and 21 prehistoric isolates were identified and recorded. The findings indicate that none of the sites or isolates are clearly eligible for listing in the National Register of Historic Places; the National Register significance of two sites and 68 isolates remains undetermined. Limited research and/or archaeological testing at these locations is recommended to determine their significance.

The sample cultural resources inventory of the proposed Cross Cascades Pipeline route was conducted in several stages dependent upon landowner access between August 1995 and April 1998. During the course of the inventory, field crews surveyed approximately 98.1 percent (approximately 224.75 miles) of the proposed pipeline route. The Area of Potential Effect employed for the study consisted of a 200-foot wide survey corridor, which will contain OPL's 60-foot construction corridor and a majority of required ancillary facilities such as pump stations and access roads. Occasional facilities will extend outside the 200-foot corridor; larger areas were surveyed to accommodate these facilities.

As a result of fieldwork to date, identified and recorded resources include 24 historic-period sites, 13 prehistoric sites, two multicomponent sites, 137 historic-period isolates, and 58 prehistoric isolates. The *National Register of Historic Places* eligibility of 33 sites and 10 isolates could not be determined from survey-level data. A majority of these sites will be avoided during construction. Three sites cannot be easily avoided. At sites that cannot be avoided, additional study will be conducted, including research, archaeological testing, consultation, or some combination of these. The study team also assisted OPL in initiating consultation with Indian tribes whose aboriginal territories include segments of the proposed pipeline route. Consultation was designed to identify potential concerns about Project effects on cultural and other resources.

### **5.1.6.2 Regional Context**

#### **Prehistory**

Prehistoric cultural patterns along the pipeline corridor differ from west to east, closely tied to the differences in geomorphology, hydrology, and climate which characterize the State of Washington. Four geographical culture areas can be distinguished: the Puget Basin, the West Cascades, the East Cascades, and the Columbia Basin. In each of these regions, knowledge of prehistory is limited by biases in the environmental zones subject to investigation, with areas that are most visible, easily accessible, and closest to major water sources receiving the most study.

In the Puget Basin, much of the archaeological research completed to date has focused on coastal and

lowland zones. Archaeological surveys conducted in these areas have resulted in the identification of several hundred archaeological sites, including shell middens, wet sites, lithic sites, and rock shelters (Wessen and Stilson 1987). While these sites are numerous, the poor recovery of occupation-related remains limits archaeological knowledge of subsistence patterns and development of a cultural chronology. In addition, it has become apparent that earthquakes and rising sea levels may also effect our knowledge of the archaeological record, by obscuring sites along shorelines and terraces within the Puget Basin.

Current understanding of the region's prehistory is based primarily on data recovered from shell middens and lithic scatters. Information regarding other aspects of cultural adaptation is lacking. Consequently, there presently exists no comprehensive synthesis of regional chronology, subsistence and trading systems, or cultural dynamics for the region as a whole.

The cultural sequence that has been derived for this region is usually divided into three developmental periods, Early, Middle, and Late, dating back to some 8,000 years before present (BP). Early Period sites date to between 8,000 and 5,000 BP, and in western Washington, are frequently assigned to the Olcott complex, named after the Olcott site on the South Fork of the Stillaguamish River. Early Period Sites tend to be situated on high river terraces, rather than along river banks or near littoral zones, and are characterized by lanceolate projectile points, knives, cobble choppers, flake scrapers, and a lack of groundstone artifacts.

Middle Period sites date to 5,000 to 1,000 BP and are distributed in the lowlands, in littoral zones, and along major rivers. Shell mounds become common by about 1,500 BP, and ground stone artifacts appear around this time. Projectile points are triangular, stemmed, or notched, bone and antler tools become common, and some forms of chopping tools and scrapers disappear.

Sites assigned to the Late Period date from 1,000 to 250 BP. The boundary between the Middle and Late periods is somewhat arbitrary, with the intent of distinguishing ethnographically described cultures and their immediate predecessors from earlier groups. Criteria used to separate components include the disappearance of some forms of groundstone artifacts, further diversification of projectile point styles, and greater use of bone and antler tools. Ethnographically, the peoples of this area were heavily dependent on littoral resources and their sites usually occur near water.

While the divisions in the sequence reviewed above are arbitrary and in need of refinement, they attempt to reflect temporal distinctions that may relate to adaptational shifts. Based on the chronology devised by Kidd (1964), this sequence reveals a basic trend from simple societies relying on generalized hunting and gathering in the Early Period, to increasing social complexity and specialized reliance on aquatic resources in later times. This view is probably a vast oversimplification, reflecting a lack of consideration of geologic processes and the interaction of such forces with the archaeological record. Data about site formation and processes such as sea level change are only recently being integrated into archaeological



research to provide a more complete understanding of the record. For example, early lowland sites that indicate a dependence on marine resources are likely to have been inundated by rising sea levels (Whittaker and Stein 1992; Stright 1990). Consequently, remaining late Pleistocene/Early Holocene sites would be those located in non-littoral, inland contexts that represent only part of the total subsistence system. Later sites, however, would still be visible along the modern shorelines. Wessen and Stilson (1987) have suggested that the relative abundance of shell middens datable to within the past 1,500 years and the corresponding lack of older middens is likely attributable to rising sea levels and erosional processes.

In the western Cascades, little systematic effort has been made to present representative knowledge of the region's prehistory. Recently, however, this has begun to change, with increasing efforts in cultural resource management and National Park Service and Forest Service studies. Most archaeologists agree that human occupation and use of inland western Washington dates to at least 8,000 years ago and continued into the historic period. The earliest sites are characterized by leaf-shaped projectile points and lithic scatters that may be the remains of broad spectrum foraging camps or hunting and gathering areas. Through time, changes in technology and site location suggest increased sedentism and specialization in the use of particular environments and resources. Cultural sequences applied to the area are frequently linked to developments in the Columbia Plateau, reviewed below, but the Puget Basin is near enough that some aspects of its sequence, described above, may also be appropriate.

East of the Cascades and into the Columbia Basin, archaeological investigations have tended to focus on the floodplains of the Columbia and Yakima rivers, with non-riverine sites receiving less intensive examination. Several models have been used to explain cultural dynamics within this region. The first uses a gradualistic approach to explain the evolution from the generalized mobile foragers of the early Windust Phase to the well organized salmon/root gathering specialists of the ethnographic period (Daugherty 1962). Others have argued that a fusion of different cultures led to the pattern observed during the ethnographic period (Swanson 1962). More recent evidence (Campbell 1985) suggests that basic features of the ethnographic "Plateau Culture" had emerged by 6,500 years BP and that historically observed traits were the result of increasing economic specialization and population growth.

The chronological sequence of cultural change for the Columbia Basin is commonly divided into five phases: Clovis, Windust, Vantage, Frenchman Springs, and Cayuse. The Paleoindian Phase dates to 12,000 to 10,500 years BP. Although it is uncertain when people first arrived in the area, the occasional discovery of Clovis projectile points suggests a minimum date somewhere between 12,000 and 11,000 BP. In Washington, because there have been no extensive analyses published on these early materials, the characteristics of settlement and subsistence during this period must remain conjectural. Based on evidence from elsewhere in the United States, however, it is likely that the structure of settlement consisted of small, highly mobile bands of hunter gatherers. Although Clovis points are generally cited as evidence for "big-game hunting," based on the wide distribution of Clovis points covering many and varied environments, it is likely that these early inhabitants of the region had a more generalized adaptation.

By 10,500 BP, aspects of the succeeding Windust Phase (10,500 to 8000 BP) had appeared. The developing grasslands and gallery forests were sparsely populated by small, highly mobile bands whose generalized subsistence adaptation was seasonally structured by an increasingly complex resource base. Habitation sites included rockshelters, caves, and open areas, and evidence often suggests that these were frequently reused over long periods of time. Riverine sites adjacent to rapids, particularly along the Columbia and Snake Rivers, contain an abundance of fish remains and associated artifacts such as grooved net sinkers and gorges (Cressman, et al., 1960). This evidence indicates increasing intensification of use of anadromous fish populations in the Columbia and its tributaries. In drier, upland sites there is often a predominance of milling stones, suggesting that seed gathering was also an important aspect of subsistence.

By the Vantage Phase (8,000 - 4,500 BP), inhabitants of the region restricted their range to riverine and some upland montane environments. With a gradual warming of the climate, regions became drier and subsistence activities became progressively less variable across seasons. Inhabitants were probably organized as highly mobile, opportunistic foragers adapted mainly to riverine environments (Chatters, 1989; Galm, et al., 1985). Sites and isolated projectile points dating to this period are nearly ubiquitous along river basins and at the confluence of major rivers (Chatters, 1986; Cressman, et al., 1960; Irwin and Moody, 1978; Leonhardy and Rice, 1970; Rice, 1968, 1973). Faunal assemblages at these sites indicate that opportunistic hunting was restricted to a narrow range of vertebrate species. Aquatic species, however, are found in much greater frequencies than terrestrial species, suggesting an increased focus on riverine resources as the climate warmed.

Additional cultural change took place during the Frenchman Springs Phase (4,500 to 2,500 BP). An amelioration of the climate between 4,700 and 4,500 BP resulted in an increase in precipitation that significantly altered the nature and distribution of land use during this period. Non-riverine environments gradually became more productive, leading to more diversely structured micro-environments affecting local adaptations. In addition to open sites and rockshelters, pithouses are found in riverine and some non-riverine environments. Some inhabitants were probably sedentary foragers living in widely dispersed pithouses, strategically located in game wintering areas, while others, especially along the Mid-Columbia, maintained a highly mobile, opportunistic foraging adaptation (Chatters, 1989). By this time, inhabitants of the region utilized a collector strategy in which mobility was logistically scheduled around annual resource structure. Along with evidence of an increase in the use of seasonally available resources is the increased evidence of food storage technology. Storage pits found in pithouse and rockshelter floors often contain salmon, deer, roots, and fresh-water mussels (Swanson, 1962).

During the subsequent Cayuse Phase (2,500 - 250 BP), a return to drier conditions resulted in decreased precipitation, again affecting the nature and distribution of land use. Resources became concentrated into fewer productive patches as resource productivity and diversity decreased. Archaeological evidence seems to indicate: (1) intensification of resource collection within these more patchy micro-environments and (2)

an increase in travel time between resources (Chatters, 1989). Along the Columbia River numbers of sites decrease concomitant with an increase in the density of pithouses aggregated into villages. Villages of 10 to 200 pithouses are widely distributed on the middle and upper Columbia River and the Snake River, but large villages are generally absent above the Snake-Columbia River confluence (Schalk, 1980). The larger villages were generally situated on islands or at the downstream end of large point bars. In the winter, people inhabited pithouse clusters, often in defensible locations (Chatters, 1989). In the spring they dispersed into small foraging groups inhabiting transitory root camps or fishing camps. Fishing was a mainstay in the summer and fall months. Fish, large game, and root crops were stored for consumption during the winter months when small groups again aggregated into larger villages.

## **Ethnography**

Determining the precise geographic distribution of Indian groups at the time of Euroamerican contact is often difficult. Dislocation of native groups in the Northwest began by at least the end of the eighteenth century, before Euroamerican explorers appeared (Campbell, 1989). Even before the appearance of Euroamericans themselves, the introduction of Euroamerican diseases had reduced the population by two-thirds or more (Boyd, 1985). Adoption of the horse also led to significant changes, increasing the mobility and perhaps the territories of surviving groups by extending their ability to carry foodstuffs and other goods over longer distances.

At the time of Euroamerican appearance, Coast Salish-speaking groups occupied the Puget Basin, West Cascades, and East Cascades segments of the project corridor, while Sahaptin-speaking groups resided in the Columbia Basin along the Columbia River and its major tributaries, the Yakima and Snake Rivers. Observations made during the early eighteenth century indicate that the Snohomish, Skykomish, and Snoqualmie occupied the Puget Basin portion of the pipeline corridor. According to ethnographic observations and Native American oral traditions, the traditional mode of settlement was non-sedentary. In order to exploit spatially and temporally clumped resources, people developed a mobile, seasonal-round type of settlement. An effective preservation and storage technology (Abbott, 1971; Schalk, 1977) increased the efficiency of the subsistence/settlement system. The villages, composed of a number of large plank houses, were traditionally occupied during the winter months, from late autumn through early spring. Localized subsistence pursuits for resources available in the warmer months (e.g., camas, shellfish, salmon runs, berries) involved dispersal of villagers from the main winter residence and construction of temporary camps. Among the Puget Basin aboriginal groups, many of these temporary camps were set up near stream mouths primarily at fishing locations where salmon occurred predictably and in abundance.

The West Cascades portion of the pipeline corridor lies within the historic territory of the Snoqualmie Indians. At the time of sustained Euroamerican contact, the Snoqualmie consisted of two distinct groups, the upper and lower bands (Waterman, 1920). Although both the upper and lower bands occupied the Snoqualmie River drainage, there were fundamental differences between them. The Upper Snoqualmie

traded and had kinship ties with the Yakama and Wenatchee Indians of eastern Washington (Gibbs, 1877). The lower band intermarried with Skykomish and Snohomish peoples and also interacted with Indian groups living along the coast of Puget Sound.

The Snoqualmie Indians subsisted primarily on inland riverine and terrestrial resources. Salmon were taken along the length of the Snoqualmie River and its tributaries below the Falls during the autumn runs from September through December. Trout and Dolly Varden were available in the Snoqualmie River and its tributaries, and in mountain lakes above the Falls. Upper Snoqualmie people relied on kinship ties with villages below the Falls for salmon fishing privileges, offering prairie resources such as deer, and camas and bracken fern roots in return (Larson, 1988). The river also provided freshwater mussels and crayfish (Turner, 1976).

The Snoqualmie in general, and the Upper Snoqualmie in particular, hunted throughout the year, emphasizing deer and mountain goat. Lower Snoqualmie people supplemented their diets with resources from both lacustrine and marine environments. The prairies above Snoqualmie Falls provided camas and bracken fern roots, and wild tiger lily which were gathered during the summer months (Haeberlin and Gunther, 1930). In addition, a variety of berries were available to Upper and Lower Snoqualmie groups along the river and at Snoqualmie Pass.

East of the Cascades, territorial boundaries are less clear. Although anthropologists do not completely agree on which ethnographic band or bands included the project area segments of the Yakima and Columbia River drainages within their territory, the distinction among the four nearby groups of Yakama, Umatilla, Kittitas, and Wanapum is unlikely to be significant in terms of aboriginal land use. These northwestern Sahaptin speakers generally shared the same culture, and the differences among them likely reflect variations in dialect, political alliances, or both.

Southern Columbia Basin groups visited a number of environmental settings during the year's subsistence activities. These people employed various technologies to harvest each resource at the time and place it was available. Both men and women conducted the yearly subsistence work of fishing, gathering, and hunting resources that were consumed fresh and processed for winter storage. Early spring activities began with root collecting as family groups left their winter settlements and camped in the tributary canyons, moving frequently, perhaps weekly, to higher elevations as local supplies were harvested and plants ripened in new locations (Hunn, 1990). Women used digging sticks and woven bags to collect roots and pack them back to their camps for baking in earth ovens and drying for use as winter supplies. Family groups carried the dried roots back to the winter settlements and buried them in below-ground caches before they set out again to collect more resources. Early spring activities also included gathering the first greens that sprouted on south-facing slopes at lower elevations.

Groups then gathered at productive fishing stations along the rivers when the spring Chinook salmon runs

began. The men fished while the women cleaned and dried the fish. As the catch dwindled, the groups again stored their supplies and left in later May to dig a variety of roots including bitterroot, camas, and others, establishing camp sites and moving them as the harvest progressed. Groups with access to streams where lamprey eels ran interrupted their root digging to net these fish.

Chinook and blueback salmon and summer steelhead runs appeared in the rivers during summer, drawing the groups to return the new root surpluses to their winter caches and harvest the fish. The adoption of horses assisted in the movement of food supplies and may have extended the ranges for resource harvest. Men pursued their traditional role of fishing and women cleaned and dried the catch. Between fish runs, women gathered and dried berries, including golden currant, gooseberry, dogwood, serviceberry, and chokecherry (Hunn, 1990).

Beginning in August, groups moved into the Cascade Mountains where they camped through the early fall to harvest and smoke-dry several species of huckleberries. While the women picked and harvested berries, men hunted deer and elk in the mountains. The groups likely split at times to allow some to return to the rivers in early September to harvest the fall Chinook run which provided much of the winter supply. They made a kind of pemmican from pounded salmon and dried berries, mixed with salmon oil. In October, people moved back to their winter settlements, processing the dying salmon of the fall Chinook run.

Columbia Basin groups maintained permanent winter settlements along protected tributaries to the Columbia and other rivers. Living in semisubterranean houses, mat lodges, or other types of substantial structures, extended families used the winter months to make and repair tools, baskets, clothing, and other necessary items. They visited other groups, conducted religious and social ceremonies, and exchanged information and food surpluses.

## **History**

The first Europeans to explore the Puget Basin were members of Captain George Vancouver's exploration of the western coastline of the Pacific Northwest. After two months of exploration in Puget Sound, Vancouver landed in the vicinity of present-day Everett, Washington, to claim the land for King George III.

In honor of the monarch's birthday, Vancouver named the lands New Georgia (Johansen and Gates, 1967; Schwantes, 1989). In the succeeding years, the Puget Basin received little attention from the Euroamericans, busy contesting ownership of an area that is now the states of Oregon, Washington and Idaho, called the "Oregon country." It was not until 1841 that Lt. Charles Wilkes, an American naval officer exploring the western seaboard, officially recorded his observations of Puget Sound and urged that it not be surrendered during boundary negotiations (Johansen and Gates, 1967).

To encourage settlement of the Oregon country, the U.S. Congress passed the Donation Land Law in 1850. The law set in motion the survey of land in the Oregon country and established a donation system to

distribute public lands.

In 1853, the Washington Territory became a separate political unit and Isaac I. Stevens was appointed the first governor. Congress enacted the Donation Land Law before treaties could be completed with Native Americans already occupying donation lands. In 1855, Stevens met with a number of Native American tribes at the Council of Walla Walla in southeastern Washington, to make treaties concerning settler occupation of the donation claims. These agreements fostered misunderstandings and resentment. Consequently, the next three years were punctuated by violence on both sides of the Cascades. In 1859, Stevens and eight tribes from the Puget Basin signed a treaty at Mukilteo, in present-day Snohomish County. After this, settlement in the Puget Basin began in earnest. The exploitation of the Puget Basin's natural resources became the driving force behind the influx of settlers (Whitfield, 1926; Schwantes, 1989; Johansen and Gates, 1967).

In the early 1860s, settlers confronted the difficult task of clearing the forests to create farmland. To finance land clearing and support their families, farmers cut and sold their own timber to sawmills operating along the seacoast. As settlers moved from the coastal areas into the interior, they sometimes eased their land-clearing burden by leasing their timber rights to loggers. In the early 1870s, professional loggers began to appear in the Puget Basin, helping to revolutionize logging by moving timber out of the forests on wheeled trucks on wooden rails made from maple. This ingenuity eventually resulted in the growth of many small logging railroads throughout the basin. Initially, most logging occurred near the coast where logs were easily transported by water to the mills. By the late nineteenth century, however, logging camps supported by logging railroads had moved deeper into the old growth forests. The roadbeds and trestle bridges required to carry the tracks were considerable construction feats in themselves (Johansen and Gates, 1967).

The early 1900s were boom years for the timber industry, but by 1915 the number of sawmills west of the Cascades had been reduced by 60 percent (Stirling, 1989). Many logging camps and sawmills disappeared from the basin. The mills that remained in operation after the 1910s merged with major timber interests like Weyerhaeuser. These larger operations continue to produce millions of board feet of lumber and plywood annually (Schwantes, 1989).

As logging crews cleared land in the Puget Basin, the farmers and dairymen followed closely in their footsteps. Once timber was harvested, farmers began to remove stumps, drain marshy areas, and in some cases, build dikes to protect their fields from periodic inundation by local streams. The wet climatic conditions of the basin were and are ideal for growing grains, various forage grasses such as timothy, and for grazing herds of dairy cows.

Settlement on the east slope of the Cascade Range began soon after the initial activity on the west side. The first permanent settlers, cattlemen looking for grazing land, arrived in the late 1860s. The bunch grass

that was the predominant ground cover on the lower hills provided excellent forage. Cattlemen from the Yakima Valley soon regularly drove herds of cattle through Snoqualmie Pass to Seattle; they also found ready markets in mining and logging camps adjacent to the route (Prater, 1981; Brier, 1958).

Mining became important soon after the arrival of the first settlers. Gold was found in the early 1870s, followed by discovery of coal in the Roslyn/Cle Elum area in 1884. The Northern Pacific Railroad, which laid track through the area around the same time, developed two mines for company use in the Roslyn coal field. Coal was mined in the immediate area until the 1950s when production costs became too high (Prater, 1981; Washington State, 1939).

In the Columbia Basin, Euroamerican exploration was initiated by Lewis and Clark, who traveled through the area of the Snake and Columbia Rivers in 1804-05. Soon after their return to St. Louis, Missouri, fur trappers from John J. Astor's Pacific Fur Company moved into the northern Columbia Basin region and built Fort Okanogan (Schwantes 1989). Not long after that, Fort Nez Perce, near the confluence of the Snake and Columbia Rivers, became the outfitting post for fur trapping expeditions up the Snake River. Later renamed Fort Walla Walla, the immediate vicinity took on national importance in 1847. The Whitmans, an American missionary couple, operated a provision center, rest station, and hospital for immigrants to the Oregon country just 25 miles east of the fort. In 1847, Cayuse Indians killed the two missionaries, along with 14 other whites in the local area (Johansen and Gates, 1967). The Whitman Massacre encouraged the U.S. Congress to establish order in the region. Oregon received territorial status and a governor was appointed in 1849 (Johansen and Gates, 1967).

Pressure on the interior Native American tribes continued due to an influx of white miners, cattlemen, and settlers. Washington's territorial governor, Isaac I. Stevens, attempted to resolve resulting conflicts at the Walla Walla council in 1855, where he negotiated treaties granting title of the Native American lands to the whites. These treaties did not eliminate the trouble, however, and growing pressure from whites resulted in a series of battles. After three years of skirmishing, the Native Americans were subdued, but the lasting result of this period of upheaval was a slowing of settlement east of the Cascades. It was not until the early 1870s that permanent settlements began to increase in the Columbia Basin (Johansen and Gates, 1967; Schwantes, 1989).

Before any farming could commence, settlers had to decide how this sagebrush covered prairie of rolling hills could be cultivated. Early cattlemen had overgrazed the free lands, with little concern for the consequences. Farmers arriving in the region in response to railroad promises of cheap land realized dry-land farming was the only method that could be employed. The topography of the region lends itself to growing crops on a grand scale. Wheat was the crop of choice for two reasons: wheat was a dry land crop and to be profitable it had to be cultivated in huge quantities. Both of these conditions existed in the Columbia Basin. The first wheat crop recorded in the area was harvested in 1879. By 1890, the region had over a million acres under dry land cultivation (Johansen and Gates, 1967; McCulloch, 1990).

Railroads, which did not serve this region until the late 1880s, encouraged wheat growing. Once the Northern Pacific Railroad pushed its tracks through Pasco, Washington, it was in need of markets in the region. Wheat farming communities created demands for inbound consumer goods and farming machinery.

Railroads changed the economic picture for local grain growers by shipping wheat at lower prices. Later, barge shipment on the Columbia River replaced railroad cars as the primary means of transporting grain out of the Columbia Basin.

Wheat was not the only crop grown in the region. Irrigation allowed farmers to broaden their agricultural horizons. The first major irrigation project in this region was a private venture called the Sunnyside Canal, which began operations in 1892. Acquired by the federal government and linked with other area irrigation projects, the Sunnyside Canal became part of a larger effort by the U.S. Reclamation Service known as the Yakima Project. The Yakima Project provided irrigation for 460,000 acres (McCulloch, 1990). With increased development of water storage capacity and the growth of irrigation systems in the 1930s-40s, the region began to expand its agricultural base. The crops grown in these irrigated fields included potatoes, alfalfa, root crops, asparagus, and peas. Orchard crops such as apples, pears, prunes, and cherries became common around the turn of the century (Schwantes, 1989).

The largest irrigation project to affect the region was the Grand Coulee Dam, completed in 1941. Built during the Great Depression, Grand Coulee Dam was expected to accomplish three objectives: provide jobs for unemployed workers, generate inexpensive electrical power, and impound water for irrigation of fields in the Columbia Basin. The Columbia Basin Project, made possible by Grand Coulee Dam, irrigates more than one million acres in central Washington (Brier, 1958).

As population in the state increased, the demand for beef increased proportionally. Livestock raising became more profitable because railroads could satisfy this demand more efficiently. In the 1870s and early 1880s, most cattle raised in the Kittitas and Yakima Valleys was either driven long distances on foot through the Snoqualmie Pass or shipped down the Columbia River on boats. Later, the stockyards at Pasco, Washington, constructed after the Northern Pacific Railroad arrived, served as a major collection and shipping point for cattle moving to Seattle or midwestern markets. Rail connections with the Northern Pacific Railroad allowed cattlemen to ship their cattle direct to market without the losses incurred during long drives (Pugh, 1982; Washington State, 1939).



In 1943, a new industry appeared in the region. A secret military installation was built in the vicinity of Richland, Washington. Unknown to the local residents, this plant was an integral part of the wartime Manhattan Project that produced the World War II atomic bombs. The facility was located there for a number of reasons, not the least of which was its proximity to Grand Coulee Dam and its enormous quantities of electrical power. The Hanford facility produced plutonium for use in atomic bombs (Schwantes, 1989; Reisner, 1986).

The massive amounts of electrical power produced by Grand Coulee Dam influenced the region in another manner. During WWII, the available electrical power made possible rapid expansion of the wartime and post-war economy. Aluminum for airplanes, sub-assemblies for destroyers, and castings for the Seattle shipyards were produced in the region using Grand Coulee power. Population in the region swelled as more industrial output was required and more jobs were created. After World War II, some industries started during the 1940s war kept the Pasco-Richland-Kennewick area economically active. The availability of cheap electrical power continued to draw businesses to the region (Johansen and Gates, 1967).

### **5.1.6.3 Results of the Inventory**

#### **Field Methods**

Prior to initiation of fieldwork, literature and records searches were conducted at a number of federal and state sources, including the Washington State Office of Archaeology and Historic Preservation, the University of Washington, and the Mt. Baker-Snoqualmie and Wenatchee National Forests. These reviews were used to compile information on previously recorded historic-period and prehistoric resources that occur within a one-half mile research corridor centered on the proposed pipeline centerline. Information from the background research was plotted on project maps, USGS quadrangles, and aerial photographs and provided to field crews for use during survey. Also highlighted were areas of potential prehistoric and historic sensitivity identified during the prefield research phase.

To ensure complete coverage of the Area of Potential Effect, the survey area was defined as a 200-foot (61-meter) corridor centered on the proposed pipeline route. Inventory was conducted using transects spaced at 15- or 30-meter intervals. Over the majority of the route, field staff worked in teams of two, aligning survey transects 15 meters on either side of the centerline. Where the corridor crossed Mt. Baker-Snoqualmie and Wenatchee National Forest lands, a third surveyor placed on the centerline narrowed transect intervals to 15 meters.

Portions of the survey corridor are characterized by vegetation that significantly reduces surface visibility, particularly in the Puget Basin and the Cascade Mountains. To control for the bias this introduces, in areas

where less than 50 percent of the surface was visible, vegetation was cleared from 1-meter<sup>2</sup> plots at 100-meter intervals to inspect the ground more closely. In addition, crew members closely inspected cutbanks, disturbed areas, treefalls, and other areas of increased visibility. Areas with impenetrable vegetation, particularly stands of blackberry brambles, were not surveyed.

In areas characterized by significant aggradational deposits, such as river or creek valleys, field staff excavated 30-cm-diameter shovel probes, 10-cm-diameter auger tests, or 50 x 50-cm shovel tests at 20- to 100-meter intervals along survey transects to identify potentially buried cultural deposits.

Cultural resources identified during the inventory were recorded as either sites or isolates, depending upon the nature of the find. Standard definitions for a site consisted of five or more artifacts within a 10-m<sup>2</sup> area; locations with fewer items were recorded as isolates. All finds were recorded on Washington OAHP-approved site forms, assigned temporary numbers, and plotted on USGS 7.5-minute topographic quadrangles and Project maps. To protect the identified historical and cultural sites, maps showing the identified locations have been provided to the state and federal agencies with jurisdiction and to Native American tribes, but are not included in the Map Atlas (Appendix A to this Application).

Permanent trinomials will be obtained from the Washington OAHP.

### **Summary of Findings**

Approximately 224.75 (360 km) or 98.1 percent of the proposed pipeline route was surveyed between August 1995 and April 1998, as permitted by landowners. About 4.25 miles (7 km) in small, scattered sections remains unsurveyed due to denied access, impenetrable vegetation, crop growth, or flood waters. Remaining sections will be surveyed as access is obtained prior to or during the construction phase of the project.

### **Sites**

Survey of the proposed pipeline corridor resulted in the identification of 13 prehistoric sites, 24 historic-period sites, 2 multicomponent sites, 58 prehistoric isolates, and 137 historic-period isolates. Table 5.1-5 presents a summary of identified sites, which are briefly discussed below from east to west. Isolates, which exhibit little complexity, are summarized in Table 5.1-6

**TABLE 5.1-6**  
**SUMMARY OF SITES IDENTIFIED DURING THE FIELD SURVEY**

**TABLE 5.1-6 (CONTINUED)**  
**SUMMARY OF SITES IDENTIFIED DURING THE FIELD SURVEY**

HRA Resource No.	Previous Field No.	Resource Description	NRHP Status
14-1	1-8-6	concrete bench with steps	Undetermined
CMSPPRR 20-2	WI-25	concrete culvert and railroad bridge timbers	Undetermined
20-3	WI-26	service road	Undetermined
25-1	--	boxcar	Undetermined
25-5	--	concrete pad foundations	Undetermined
26-1	--	concrete culvert under railroad grade	Undetermined
26-2	WI-31	historic railroad berm and timbers	Undetermined
26-4	WI-35,38	section of inactive powerline	Undetermined
26-6	WI-34	snowshed timbers and concrete footings	Undetermined
26-8	--	concrete block	Undetermined
26-9	--	trestle and concrete footings	Undetermined
27-3	WI-39	concrete footing	Undetermined
27-5	WI-36	abandoned railroad bridge	Undetermined
27-4	WI-40	abandoned railroad bridge	Undetermined
27-7	--	concrete footing with metal box	Undetermined
28-2	--	cobble foundation	Undetermined
28-4	--	stacked lumber pile	Undetermined
27-6	--	concrete footing and bottle base	Undetermined
28-6	WI-47a	concrete pilings	Undetermined
28-7	WI-47b	concrete pilings	Undetermined
28-8	WI-48	section of inactive powerline	Undetermined
28-9	WI-50	concrete footing	Undetermined
28-11	WI-51	concrete block	Undetermined
28-12	--	wooden ties and timbers	Undetermined
28-13	WI-52	16-foot section of railroad track	Undetermined
28-14	WI-53	remnant of timber and log bridge	Undetermined
28-16	WI-55	16-foot section of railroad track	Undetermined
28-15	WI-54	concentration of railroad ties	Undetermined
28-19	--	concrete footing	Undetermined

**TABLE 5.1-6 (CONTINUED)**  
**SUMMARY OF SITES IDENTIFIED DURING THE FIELD SURVEY**

HRA Resource No.	Previous Field No.	Resource Description	NRHP Status
29-1	WI-56	2 abandoned railroad signal poles	Undetermined
29-2	--	concrete railroad tunnel	Undetermined
29-3	WI-58	section of inactive powerline	Undetermined
29-4	WI-61	3 sections of inactive powerline	Undetermined
29-6	WI-59	abandoned railroad signal pole and ties	Undetermined
29-7	WI-60	concentration of railroad spikes	Undetermined
30-1	WI-63	short section of railroad track	Undetermined
30-2	WI-64	concrete footing	Undetermined
30-4	WI-66	concrete pier and ceramic insulator fragment	Undetermined
30-5	WI-69	8 wooden insulator pegs	Undetermined
30-6	WI-71	concrete footing	Undetermined
30-9	WI-67	3 sections of inactive powerline	Undetermined
30-10	WI-70	33 railroad ties	Undetermined
30-12	--	2 bolted timber beams, portion of electrical pole	Undetermined
21-2	--	refuse scatter (Minot Spur Debris Scatter [CR05-05-61])	Undetermined
Harris Creek Trestle	--	railroad trestle remains (45KI58)	Ineligible
Snoqualmie Wagon Rd 21-6	--	road segment (Tinkham segment [CR05-05-38])	Eligible
29-5	WI-57	segment of old roadway	Eligible
30-7	WI-62	segment of old roadway	Eligible
30-8	WI-62	segment of old roadway	Eligible
23-1 (45KI442)	2-3-4	refuse scatter	Undetermined
24-1 (CR05-05-51)	--	Snoqualmie Pass Railroad Tunnel	Eligible
25-6 (Hyak Depot)	--	Hyak Depot buildings	Undetermined
28-10 (Whittier)	WS-1	historic-period site	Undetermined
36-1	ES-10	foundation	Undetermined
41-2 (45KT1086)	3-10-3	historic dump	Undetermined
52-5	ES-6	railroad depot complex	Listed
52-6	ES-8	foundation and debris piles	Undetermined
52-7	ES-7	foundation	Undetermined

**TABLE 5.1-6 (CONTINUED)**  
**SUMMARY OF SITES IDENTIFIED DURING THE FIELD SURVEY**

<b>HRA Resource No.</b>	<b>Previous Field No.</b>	<b>Resource Description</b>	<b>NRHP Status</b>
52-8	ES-9	foundation	Undetermined
52-9	ES-5	foundation and debris scatter	Undetermined
53-2	ES-4	foundation and debris scatter	Undetermined
53-4	4-6-6	historic-period ranch (Leader Property)	Undetermined
54-2	ES-3	electricity and telephone line insulators	Not eligible
54-3	ES-2	electricity and telephone line insulators	Not eligible
55-4	4-7-7	historic-period ranch (Steiner Property)	Undetermined
58-1	9/6/1 (LAAS)	lithic scatter	Not eligible
62-1 (45KT1083)	4-11-1	lithic scatter	Undetermined
62-10	4-11-13	lithic scatter	Undetermined
62-11 (45KT1084)	4-11-14	lithic scatter	Undetermined
64-2	ES-1	railroad camp	Undetermined
64-3 (45GR672)	5-1-1	rock piles, historic-period artifacts	Undetermined
68-3	--	homestead site	Undetermined
82-1 (45AD106)	5-10-2	historic-period dump	Undetermined
88-1 (45FR403)	5-13-1	historic-period dump	Undetermined
IN3-2	AS-2	developed spring and lithic scatter	Undetermined
59-1	98-2	lithic scatter	Undetermined
IN11-4	AS-1	lithic scatter	Undetermined
IN12-1	AS-6	lithic scatter	Undetermined
IN12-4	AS-5	lithic scatter	Undetermined
IN12-10	AS-3	lithic scatter	Undetermined
IN12-13	AS-7	lithic scatter	Undetermined
IN12-14	AS-8	lithic scatter	Undetermined
IN12-15	AS-9	lithic scatter	Undetermined
IN36-1	AS-4	lithic scatter	Undetermined

Site 14-1, located in King County, consists of a Memorial Bench Monument in Snoqualmie, overlooking the former site of the mill town of Snoqualmie Falls. The memorial bench rests near the former site of the Weyerhaeuser Company hospital and was erected in the late 1920s in honor of a founding physician of the hospital.

The next site identified is the Chicago, Milwaukee, St. Paul and Pacific Railroad (Milwaukee Railroad), located in King and Kittitas counties. This site is comprised of 42 isolated artifacts and features that are associated with the Milwaukee Railroad. This site identifies artifacts and features related to the Milwaukee Railroad, but does not include graded areas that may have been part of the original railroad. Because the Milwaukee Railroad extended past the route of the Olympic Pipe Line study corridor, the boundaries of this site have not been determined and additional features are undoubtedly present beyond the survey corridor. The site begins in the Cascade Mountains on the west side of Snoqualmie Pass and extends for approximately 24-miles (38-kilometers). In general four different types of features were found, including bridge remains, signals, road parts, abandoned electric and telephone lines, foundations, and electrical equipment, as well as a boxcar (resource 25-1) found near the eastern portal of the Snoqualmie Tunnel.

Site 21-2, located in King County, is a scatter of numerous historic-period artifacts. This site has been previously recorded as the Minot Spur Debris Scatter (CR05-05-61).

The next identified site is a historical railroad trestle located at Harris Creek, approximately 1,100 feet (335 meters) south of the South Fork Snoqualmie River. The site was recorded in 1979 as 45KI58. The Harris Creek Trestle was built as a logging railroad spur off the Chicago, Milwaukee, St. Paul & Pacific Railroad.

Four sections of the old Snoqualmie Pass Wagon road were identified, designated numbers 21-6, 29-5, 30-7, and 30-8. Constructed in 1865, portions of the site are located on both the western and eastern side of Snoqualmie Pass.

Site 23-1, located within a wooded area west of Snoqualmie Pass Tunnel, consists of a scatter of historic household and domestic debris.

Site 24-1 is the Snoqualmie Pass Tunnel, associated with the Chicago, Milwaukee, St. Paul and Pacific Railroad, constructed in 1914-1915. Measuring 2.25 miles in length, the Snoqualmie Pass Tunnel was nominated to the NRHP in 1989.

Site 25-6 consists of three early twentieth century frame houses located at the old Milwaukee Railroad stop in Hyak, Washington. The houses were constructed in 1914 as worker housing for railroad employees.

Site 28-10 is the Whittier site, a historic-period railroad siding located along the abandoned Chicago, Milwaukee, St. Paul & Pacific Railroad line.

Site 36-1 consists of a concrete wall foundation, while 41-2 is a scatter of historic domestic debris, apparently dating from the 1930s-1940s. Both appear to be the remains of historic homesteads.

Site 52-5 is a historic-period building complex associated with the Kittitas Depot and abandoned Chicago, Milwaukee, St. Paul & Pacific Railroad line. The site is located both north and south of the abandoned railroad. It includes four standing structures, but may be expanded to include sites 52-6, 52-7, 52-8, and 52-9, recorded independently. These sites consist of historic foundations and debris concentrations located on the outskirts of the community of Kittitas and likely associated with the Milwaukee Railroad.

Site 53-2, located in the Kittitas Valley, consists of two foundations and a light scatter of historic-period debris. The two features are located along the south side of the old Chicago, Milwaukee, St. Paul & Pacific Railroad line; the site appears to have been associated with the railroad.

Site 53-4 consists of the Leader Property, an 8-acre ranch composed of two modern houses, a large barn, a modern concrete-block storage building, and two sheds. The barn and the sheds appear to be the oldest buildings on the property, possibly dating from the early 1910s.

Sites 54-2 and 54-3 are is scatters of electricity and telephone line insulator fragments located southeast of the town of Kittitas.

Site 55-4 is the Steiner Ranch, established around 1940. The six buildings that remain on the property include the main house, the pump house, the stable, the chicken coop, the feed barn, and the granary.

Sites 58-1, 62-1, 62-10, and 62-11 are prehistoric lithic scatters located on the Yakima Training Center. Site 64-2, also on the Training Center, consists of a historical debris scatter located approximately 0.5 mile (0.8 kilometer) north of the abandoned Chicago, Milwaukee, St. Paul & Pacific Railroad line, in the vicinity of Wanapum Dam. This site may have served as a maintenance camp during the later years of the Milwaukee Railroad, which operated between 1909 and the 1940s.

Site 64-3 is located west of Highway 243, between the Wanapum Dam complex and Wanapum Village, on a terrace immediately above the Columbia River. The site consists primarily of numerous piles of river cobbles which extend north and south of the corridor. While their function remains undetermined, they appear to be of historic origin, likely related to agricultural pursuits. Other components of the site include several old fruit trees and a historic debris scatter.

Site 68-3, in Grant County, is a historic homestead consisting of a foundation, cistern, trough, and scattered artifacts. Sites 82-1, in Adams County, and 88-1, in Franklin County, are also historic debris scatters.

Site IN3-2 is a multi-component property consisting of a sparse lithic scatter associated with a historically developed spring. The site is located at Poison Spring, above the eastern end of Johnson Canyon east of Kittitas Valley. Prehistoric cultural materials are relatively sparse, consisting of a few flakes scattered around the spring. Historical features and debris are more prevalent, including a large depression and well east of the spring, feeding water into a pipe and a series of water troughs; remains of two structures, and a widespread scatter of historic debris.

The remaining nine sites (59-1, IN11-4, IN12-1, IN12-4, IN12-10, IN12-13, IN12-14, IN12-15, and IN36-1) consist of prehistoric lithic scatters located in Kittitas County. One of these site s(59-1) is located immediately west of Ginkgo State Park lands; the remaining eight are located within the State Park boundary.

### **Isolates**

During survey of the Cross Cascade Pipeline route, HRA and Dames & Moore survey crew members recorded 188 isolates, including 51 prehistoric isolates and 137 from the historic period, as shown in Table 5.1-6. Most of the prehistoric isolates consist of surface finds of one or more artifacts; these are considered ineligible for the National Register because they represent such limited function that they can provide no more information about the area's prehistory. By contrast, the National Register status of four prehistoric isolates, consisting of rock cairns, needs to be determined in consultation with the Indian tribes. The same is true for two cedar trees that appear to have been recently stripped of bark sections.

Most of the historic-period isolates consist of isolated artifacts or features such as irrigation ditches or inactive sections of powerlines and are considered to be ineligible for the National Register because they offer no additional information about the area's history. The eligibility of four of the historic-period isolates, however, needs to be determined through additional research. These include a bridge, two road sections, and a railroad section.

**TABLE 5.1-6**  
**SUMMARY OF ISOLATES IDENTIFIED DURING FIELD SURVEY**



**TABLE 5.1-6 (CONTINUED)**  
**SUMMARY OF ISOLATES IDENTIFIED DURING FIELD SURVEY**

<b>HRA Resource No.<sup>1</sup></b>	<b>Previous Field No.</b>	<b>Resource Description</b>	<b>NRHP Status</b>
3-1	WI-4	cut sandstone block	Not eligible
13-1	1-7-3	large rusted metal cylinder	Not eligible
17-1	1-10-2	old wooden power pole	Not eligible
19-1	2-1-2	wire-wrapped wood pipe	Not eligible
20-1	WI-24	section of old roadway	Not eligible
21-3	--	possible bridge remains	Undetermined
22-1	2-3-2	stripped cedar tree (possibly recent)	Undetermined
22-2	2-3-3	stripped cedar trees (possibly recent)	Undetermined
26-3	--	old roadway	Undetermined
26-5	WI-33	large wood timber	Not eligible
27-1	WI-37	rectangular amethyst-glass bottle base	Not eligible
28-1	WI-41	stacked wood timbers	Not eligible
28-17	WI-43	wood foundation	Not eligible
28-3	WI-44	embossed whiteware ceramic fragment	Not eligible
28-5	WI-46	mounded earth and timbers	Not eligible
28-18	WI-49	white transfer-print earthenware fragment	Not eligible
30-3	WI-65	large wood timber/pole	Not eligible
30-11	--	brick and cobble pile	Not eligible
32-1	3-5-2, 3-10-2	2 irrigation ditches	Not eligible
33-1	3-6-1	old road	Not eligible
33-2	3-6-3	old road	Not eligible
33-3	3-6-4	tobacco tin	Not eligible
35-1	EI-73	wire-wrapped wood pipe	Not eligible
35-2	--	irrigation ditch	Undetermined
36-2	3-7-3	concrete pier	Not eligible
37-1	3-8-1	historic farming equipment	Not eligible
39-1	3-9-1	whiteware and flat glass fragments	Not eligible
39-2	3-9-2	lithic flake	Not eligible
41-4	--	CCS flake	Not eligible
41-1	3-10-1	rock piles	Not eligible

**TABLE 5.1-6 (CONTINUED)**  
**SUMMARY OF ISOLATES IDENTIFIED DURING FIELD SURVEY**

<b>HRA Resource No.<sup>1</sup></b>	<b>Previous Field No.</b>	<b>Resource Description</b>	<b>NRHP Status</b>
41-3	3-10-4	historic farming plow/rake	Not eligible
42-1	3-10-5	irrigation ditch	Not eligible
42-2	3-10-6	rock piles	Not eligible
43-1	EI-70	irrigation ditch	Not eligible
43-2	EI-69	trailer and dozer blades	Not eligible
44-1	4-1-1	flaked cobble	Not eligible
46-1	4-2-1	irrigation ditch	Not eligible
46-2	4-2-2	irrigation ditch	Not eligible
46-3	4-2-3	irrigation ditch	Not eligible
46-4	4-2-4	irrigation ditch	Not eligible
46-5	4-2-5	irrigation ditch	Not eligible
46-6	4-2-6	irrigation ditch	Not eligible
47-1	EI-68	irrigation ditch	Not eligible
47-2	EI-67	rock piles	Not eligible
47-3	--	irrigation ditch	Not eligible
48-1	EI-64	irrigation ditch	Not eligible
48-2	--	grooved fence weight	Not eligible
49-1	4-4-2	irrigation ditch	Not eligible
49-2	4-4-12	irrigation ditch	Not eligible
49-3	4-4-14	irrigation ditch	Not eligible
49-4	4-4-15	irrigation ditch	Not eligible
49-5	4-4-16	irrigation ditch	Not eligible
50-1	EI-63	irrigation ditch	Not eligible
51-1	EI-62	irrigation ditches	Not eligible
51-6	--	irrigation ditch	Not eligible
51-5	--	brown glazed stoneware fragment	Not eligible
51-3	EI-56	irrigation ditch	Not eligible
51-4	EI-55	irrigation ditch	Not eligible
52-1	EI-54	irrigation ditch	Not eligible
52-2	EI-53	2 rock piles	Not eligible

**TABLE 5.1-6 (CONTINUED)**  
**SUMMARY OF ISOLATES IDENTIFIED DURING FIELD SURVEY**

<b>HRA Resource No.<sup>1</sup></b>	<b>Previous Field No.</b>	<b>Resource Description</b>	<b>NRHP Status</b>
52-3	EI-52	irrigation ditch	Not eligible
52-4	EI-51	irrigation ditch	Not eligible
52-10	EI-50	irrigation ditch	Not eligible
52-11	EI-49	irrigation ditch	Not eligible
53-1	4-6-4	irrigation ditch	Not eligible
53-3	4-6-5	irrigation ditch	Not eligible
53-5	4-6-7	irrigation ditch gate	Not eligible
53-6	--	railroad grade	Undetermined
53-7	--	irrigation ditch	Not eligible
54-1	EI-47	telephone line insulator	Not eligible
55-1	4-7-4	irrigation ditch	Not eligible
55-2	4-7-5	irrigation ditch	Not eligible
55-3	4-7-6	irrigation ditch	Not eligible
55-5	4-7-8	irrigation ditch	Not eligible
61-1	--	CCS flake	Not eligible
61-2	--	CCS flake	Not eligible
61-3	--	2 CCS chunks	Not eligible
62-2	4-11-2	lithic projectile point, point base, point tip	Not eligible
62-3	4-11-3	lithic biface fragment	Not eligible
62-4	4-11-4	lithic projectile point base	Not eligible
62-5	4-11-5	lithic biface and lithic flake	Not eligible
62-6	4-11-6	lithic projectile point base	Not eligible
62-7	4-11-10	lithic biface tip	Not eligible
62-8	4-11-11	2 lithic flakes	Not eligible
62-9	4-11-12	lithic flake	Not eligible
63-4	--	CCS flake	Not eligible
63-5	--	CCS biface, 3 lithic flakes	Not eligible
63-6	--	2 CCS flakes	Not eligible
63-1	EI-45	lithic flake	Not eligible
63-2	EI-44	lithic flake	Not eligible

**TABLE 5.1-6 (CONTINUED)**  
**SUMMARY OF ISOLATES IDENTIFIED DURING FIELD SURVEY**

HRA Resource No. <sup>1</sup>	Previous Field No.	Resource Description	NRHP Status
63-3	EI-43	modified lithic flake	Not eligible
64-1	EI-42	aligned railroad ties	Not eligible
64-4	5-1-2	3 lithic flakes	Not eligible
64-5	5-1-3	lithic flake	Not eligible
64-6	5-1-4	lithic flake	Not eligible
66-1	5-2-1	lithic flake	Not eligible
68-1	EI-41	concrete spring box	Not eligible
68-2	EI-40	rock piles	Not eligible
69-1	EI-39	irrigation ditch	Not eligible
69-2	EI-38	irrigation ditch	Not eligible
69-3	EI-37	irrigation ditch	Not eligible
69-4	EI-36	irrigation ditch	Not eligible
70-1	EI-34	irrigation ditch	Not eligible
70-2	EI-32	irrigation ditch	Not eligible
70-3	EI-33	irrigation ditch	Not eligible
71-1	EI-31	irrigation ditch	Not eligible
72-1	5-5-1	irrigation ditch	Not eligible
72-2	5-5-2	irrigation ditch	Not eligible
73-1	5-5-3 5-6-1	irrigation ditch	Not eligible
75-1	5-6-2 5-7-1	irrigation ditch	Not eligible
77-1	--	rock cairn	Undetermined
79-1	--	wood timbers	Not eligible
80-1	5-9-1 5-10-1	irrigation ditch	Not eligible
82-2	EI-29	irrigation ditch	Not eligible
82-3	5-10-3	irrigation ditch	Not eligible
82-4	EI-28	irrigation ditch	Not eligible
83-1	EI-27	irrigation ditch	Not eligible
83-2	5-10-4 5-11-1	irrigation ditch	Not eligible

**TABLE 5.1-6 (CONTINUED)**  
**SUMMARY OF ISOLATES IDENTIFIED DURING FIELD SURVEY**

HRA Resource No. <sup>1</sup>	Previous Field No.	Resource Description	NRHP Status
83-3	EI-26	irrigation ditch	Not eligible
84-1	5-11-2	irrigation ditch	Not eligible
85-1	EI-25	irrigation ditch	Not eligible
86-1	5-12-1	irrigation ditch	Not eligible
88-2	5-13-2	can	Not eligible
88-3	5-14-1	irrigation ditch	Not eligible
89-1	EI-24	irrigation ditch	Not eligible
89-2	EI-23	irrigation ditch	Not eligible
89-3	EI-22	irrigation diversion box	Not eligible
89-4	EI-21	irrigation ditch	Not eligible
89-5	EI-20	concrete well	Not eligible
89-6	EI-19	irrigation ditch	Not eligible
90-1	EI-18	irrigation ditch	Not eligible
90-2	EI-17	irrigation ditch	Not eligible
90-3	EI-16	irrigation ditch	Not eligible
90-4	EI-15	irrigation ditch	Not eligible
91-1	EI-14	irrigation ditch	Not eligible
91-2	EI-13	irrigation ditch	Not eligible
92-1	EI-10	irrigation ditch	Not eligible
92-2	EI-9	irrigation ditch	Not eligible
93-1	EI-8	irrigation ditch	Not eligible
94-1	EI-7	irrigation ditch	Not eligible
95-1	5-17-1	irrigation ditch	Not eligible
95-2	EI-6	irrigation ditch	Not eligible
96-1	EI-5	irrigation ditch	Not eligible
96-2	5-18-1	irrigation ditch	Not eligible
97-1	5-19-1	irrigation ditch	Not eligible
97-2	--	rock cairn	Undetermined
98-1	EI-4	irrigation ditch	Not eligible
98-2	EI-3	rock pile	Not eligible

**TABLE 5.1-6 (CONTINUED)**  
**SUMMARY OF ISOLATES IDENTIFIED DURING FIELD SURVEY**

HRA Resource No. <sup>1</sup>	Previous Field No.	Resource Description	NRHP Status
98-3	EI-2	rock pile	Not eligible
98-4	EI-1	rock pile	Not eligible
98-5	5-20-1	rock pile	Not eligible
98-6	5-20-2	rock pile	Not eligible
98-7	5-20-3	rock pile	Not eligible
100-1	5-20-4	refrigerator	Not eligible
IN2-1	AI-1	irrigation ditch	Not eligible
IN2-2	AI-2	tin can scatter (recent)	Not eligible
IN3-1	AI-3	CCS flake	Not eligible
IN3-3	AI-5	2 CCS flakes	Not eligible
IN3-4	AI-4	several rock piles, aligned north-south (old fence line)	Not eligible
57-1	IF-4	1 hole-in-cap can	Not eligible
57-2	IF-3	iCCS flake	Not eligible
57-3	IF-2	i CCS flake	Not eligible
57-4	IF-1	Amethyst glass bottle base	Not eligible
IN7-1	AI-6	tobacco tin	Not eligible
59-1	IF-5	CCS core and single flake	Not eligible
59-2	IF-6	1 CCS flake	Not eligible
59-3	IF-7	1 CCS flake	Not eligible
IN10-1	AI-7	CCS flake	Not eligible
IN10-2	AI-8	fragmented 1920s truck parts	Not eligible
IN10-3	AI-9	hole-in-top can	Not eligible
IN11-1	AI-10	CCS flake	Not eligible
IN11-2	AI-11	CCS biface fragment	Not eligible
IN11-3	AI-12	2 CCS flakes	Not eligible
IN12-2	AI-24	CCS flake	Not eligible
IN12-3	AI-22	CCS flake	Not eligible
IN12-5	AI-25	4 fragments of amethyst bottle glass	Not eligible
IN12-6	AI-26	edge-modified flake of petrified wood	Not eligible
IN12-7	AI-27	CCS flake	Not eligible

**TABLE 5.1-6 (CONTINUED)**  
**SUMMARY OF ISOLATES IDENTIFIED DURING FIELD SURVEY**

HRA Resource No. <sup>1</sup>	Previous Field No.	Resource Description	NRHP Status
IN12-8	AI-28	2 CCS flakes	Not eligible
IN12-9	AI-29	3 CCS flakes	Not eligible
IN12-11	AI-20	CCS flake	Not eligible
IN12-12	AI-21	petrified wood flake	Not eligible
IN12-16	AI-13	CCS flake and a rock cairn	Undetermined
IN12-17	AI-14	granite cobbles	Not eligible
IN12-18	AI-15	rock cairn	Not eligible
IN12-19	AI-16	granite cobbles	Not eligible
IN12-20	AI-17	CCS flake	Not eligible
IN12-21	AI-18	granite cobbles	Not eligible
IN12-22	AI-19	rock cairn (recent)	Not eligible
IN12-23	AI-23	3 petrified wood flakes	Not eligible
IN35-1	AI-34	CCS flake	Not eligible
IN36-2	AI-30	CCS and petrified wood flakes	Not eligible
IN36-3	AI-31	CCS flake	Not eligible
IN36-4	AI-32	petrified wood flake	Not eligible
IN36-5	AI-33	2 CCS flakes	Not eligible

2. Resource Number refers to the Appendix E map page showing the isolate location.

#### **5.1.6.4 Indian Tribal Consultation**

The American Indian Religious Freedom Act of 1978, the National Environmental Policy Act of 1969, and Section 106 of the National Historic Preservation Act of 1966, as amended, provide for consultation with American Indian groups when a proposed project may have an effect on cultural or traditional religious places or resources that have value to an Indian tribal group. OPL initiated consultation with American Indians concurrent with the archaeological investigation, and consultation is ongoing. In addition, the U.S. Forest Service will consult with a number of federally recognized tribes that hold treaty rights in the Project vicinity.

OPL's consultation includes both federally and non-federally recognized tribal organizations. To identify appropriate groups, a list of tribal organizations was compiled based on information in the Treaty of Point Elliot and the Yakima Treaty, both of which were negotiated in 1855; anthropological studies of aboriginal territories; aboriginal land areas determined by the Indian Claims Commission; and consultation with the U.S. Forest Service Region 6 Governments Staff Assistant. Identified tribes include the Tulalip Tribes, Suquamish Tribe, Duwamish Tribe, Snoqualmie Tribe, Muckleshoot Tribe, Confederated Tribes of the Colville Reservation, Wanapum Tribe, Confederated Tribes and Bands of the Yakama Indian Nation, Confederated Tribes of the Umatilla Indian Reservation, Confederated Tribes of the Warm Springs Reservation, and the Nez Perce Tribe. Most of the tribes included in the consultation process had aboriginal territories along the pipeline route. The Warm Springs and Nez Perce are included because they have treaty fishing rights in the Columbia River system and are concerned about fisheries and habitats in the Project vicinity.

Consultation has consisted of sending a series of letters describing the Project, its location and studies, and requesting meetings to discuss the Project and the concerns of Indian tribal organizations. Letters have gone to tribal chairpersons, with copies to cultural committee chairpersons and cultural resource specialists, when they have been identified. After initial letters have been sent out, follow-up telephone calls were made to facilitate setting up meetings. To date, meetings with several tribes have taken place. Consultation is continuing to attempt to set up additional meetings.

#### **5.1.6.5 Impacts to Cultural Resources**



Approximately 224.75 miles (360 kilometers) or 97 percent of the proposed 231-mile pipeline route has been inventoried for cultural resources, leaving 6.25 miles (10 kilometers), or 2.9 percent of the route, still to be surveyed. Background research and fieldwork resulted in the identification of 13 prehistoric sites, 24 historic-period sites, 2 multicomponent sites, 58 prehistoric isolates, and 137 historic-period isolates. Three historic-period sites and no prehistoric sites have already been listed or determined eligible for listing in the National Register of Historic Places. Two historic-period sites and one prehistoric site have been recommended as ineligible for listing. The significance of 12 prehistoric, 19 historic, and 2 dual-component sites; and 6 prehistoric and 4 historic isolates could not be determined from survey-level data. All but three of these sites and isolates will be avoided during project construction. At those sites that cannot be avoided, additional study will be conducted to determine their eligibility, potential project impacts, and appropriate mitigation measures.

Construction of the project within a 60-foot (18-meter) corridor has the potential to disturb or destroy archaeological remains that are located at the ground surface and to a depth of at least 4 feet (1.2 meters). The 200-foot (61-meter) survey corridor will allow OPL to adjust the pipeline to avoid most archaeological sites. Several route alternatives are being considered and OPL will continue making adjustments to accommodate the avoidance of impacts to significant cultural and other resources.

In addition, the pipeline route passes through a paleontological resource area within the Ginkgo Petrified Forest State Park, a designated National Natural Landmark. Cultural resources are often associated with these fossil beds, which provided a source for lithic tool materials. OPL is working closely with State Parks representatives to avoid significant resource areas within this landmark.

Construction is not likely to affect historical buildings or structures. At present, none appear close enough to the construction corridor or sufficiently fragile that the types of mechanical equipment used could result in vibrations that affect structural integrity. Construction noise, increased transportation, aesthetics, and similar effects will be temporary and also should not affect buildings, structures, or archaeological sites. Construction crews will take measures to assure that the work does not result in erosion that could affect archaeological deposits and other resources.

Normal operation of the pipeline and its ancillary facilities is not expected to affect National Register-listed or eligible resources. Leakage, fire, or other emergencies and control or clean-up procedures could affect nearby archaeological or historical resources. A draft Programmatic Agreement prepared for the Project provides for the development of an Emergency Plan to address such situations.

Until consultation with the Indian Tribes is concluded, no conclusions can be made about potential Project effects on traditional cultural properties or other resources that might be of concern to the Indian tribes.

#### 5.1.6.6 Recommendations for Additional Survey

Because cultural resources were identified throughout sampled survey areas, OPL will complete additional field survey of the remaining segments of the proposed pipeline survey corridor prior to development. OPL intends to continue to work with federal and state agency archaeologists, and Indian Tribes, to develop agreements concerning the identification and mitigation of any additional sites that are found prior to and during construction. This work will address the following needs:

- Continue consultation with the Indian Tribes;
- Complete the survey for areas where landowner permission has not yet been received or where the presence of agricultural crops, impenetrable vegetation, or flood waters has prevented survey to date;
- Complete survey of any new reroutes made to accommodate concerns for engineering or other disciplines;
- Determine which newly identified resources can be avoided by pipeline construction and which cannot;
- Complete Determinations of National Register eligibility through a combination of archival research, archaeological testing, and consultation as needed for any resources that cannot be avoided by project construction;
- Assess the nature and extent of adverse effects on any National Register-eligible resources that will be impacted by Project construction; and
- Prepare and implement an overall Cultural Resources Treatment Plan, specific Data Recovery Plans (as needed), a Native American Graves Protection and Repatriation Act Plan, a construction Monitoring Plan, and an operations Emergency Plan.

To guide continued work on the Project, a draft Programmatic Agreement has been prepared, to be negotiated among the U.S. Forest Service, the State Historic Preservation Officer, and the Advisory Council on Historic Preservation. Parties that will be consulted during the negotiation and will be asked to concur in the Agreement will include the Tulalip Tribes, Suquamish Tribe, Snoqualmie Tribe, Muckleshoot Tribe, Colville Tribe, Wanapum Tribe, Yakama Nation, Umatilla Tribe, Warm Springs Tribe, and Nez Perce Tribe; Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service; and the Washington State Department of Natural Resources, Parks and Recreation Commission.

### 5.1.6.7 Mitigation Measures

Additional study will be conducted to determine National Register eligibility of three sites identified within the project corridor. Furthermore, additional survey work is necessary on approximately 1.9 percent of the route where access was not obtained to provide a complete inventory of the corridor. As a result, site-specific mitigation measures for unsurveyed areas cannot be recommended at this time. The following general recommendations, however, can be made.

- Because pipeline construction could have an impact upon previously unknown cultural resources, construction within archaeologically sensitive areas will be monitored to ensure proper identification, evaluation, and if necessary, mitigation of discovery situations.
- Monitoring will be directed by a qualified archaeologist.
- If cultural resources are identified during construction, the archaeologist will request that construction be halted in the vicinity of the find until necessary steps for evaluation of the significance of the find can be taken and appropriate mitigation actions can be identified, if warranted. The Washington State OAHP will also be contacted at this time.
- In accordance with RCW 27.44, Indian Graves and Records, if a discovered site contains Native American human remains, the monitor will notify the appropriate Tribe and discuss treatment measures with Tribal representatives and the OAHP.
- If the National Register significance of a discovered site cannot be evaluated using available data, an evaluation plan will be developed. Such a plan might include surface collection, archaeological excavation, and artifact analysis.
- If a discovered site is found eligible for listing in the National Register of Historic Places, avoidance will be recommended as mitigation. This is particularly important in the case of Native American human remains. Avoidance may also be the only feasible option for mitigating adverse effects to traditional cultural properties and religious sites. If avoidance is not feasible, a resource plan will be developed for the site. The resource plan will identify site protection measures, data recovery methods, or both.

### **5.1.7 AGRICULTURAL CROPS/ANIMALS**

Large sections of the proposed six-county Cross Cascade Pipeline Project Area cross lands suitable for agricultural use, particularly the rich alluvial soils adjacent to many of the streams and rivers crossed by the proposed pipeline route. The following section describes agricultural activities along the proposed route, and also includes information on agricultural zoning, soil types, Prime Farmland classification, irrigation methods, and crop values. The section continues with a description of the relationship and expected impact of the Project on adjacent agricultural operations.

#### **5.1.7.1 Existing Conditions**

##### **Snohomish County**

Approximately one mile of the proposed pipeline route crosses lands specifically zoned for agricultural use under the Snohomish County Zoning Code. This agricultural area is located on the east bank of the Snoqualmie River near Milepost 8, see Appendix A. In addition, all other areas crossed by the proposed route in Snohomish County have zoning designations that permit agricultural uses of the land. Most of the agricultural tracts crossed by the pipeline route in Snohomish County are either used as pasture land for herds of dairy cattle, or for grass fodder production.

The proposed route is located on soils of the Alderwood-Everett, Puget-Sultan-Pilchuck, and Tokul-Pastik soil associations. Portions of these soil associations are comprised of Alderwood gravelly sandy loam, Pastik silt loam, Puget silty clay loam, Sultan silt loam, Sultan variant silt loam, Tokul silt loam, and Tokul gravelly loam; under specified conditions, these soil types are classified as Prime Farmland by the USDA Natural Resource Conservation Service.

##### **King County**

None of the lands crossed by the proposed pipeline route are specifically zoned for agricultural use under the King County Zoning Code. However, most areas crossed by the proposed route in King County have zoning designations that permit agricultural uses of the land. Most of the agricultural tracts crossed by the pipeline route in King County are used either as pasture for dairy cattle or for grass fodder production.

The proposed route is located on soils of the following soil associations: Tokul-Blethan-Ogarty, Tokul, Barneston-Klaus-Skykomish, Edgewick-Seattle-Nooksack, Kaleetan-Melakwa, Playco-Nagrom, Reggad-Altapeak-Index, and Nimue-Haywire-Chinkmin. Portions of these soil associations are comprised of Edgewick silt loam, Nooksack silt loam, Seattle muck, and Tokul gravelly loam; under specified conditions, these soil types are classified as Prime Farmland by the USDA Natural Resource Conservation

Service.

### **Kittitas County**

Approximately 33 miles of the proposed pipeline route cross lands specifically zoned for agricultural use under the Kittitas County Zoning Code. These agricultural areas are located between the Yakima River crossing (near Milepost 94), and the Johnson Canyon area, about 7.5 miles southeast of Kittitas (near Milepost 127). In addition, all other areas crossed by the proposed route in Kittitas County have zoning designations that permit agricultural uses of the land. Agricultural lands crossed by the proposed pipeline route are used mainly as livestock grazing/rangelands, although some irrigated and nonirrigated croplands are also crossed by the route. Primary crops grown in these areas include corn, potatoes, and cereal grains. Alfalfa and various grasses are also grown for hay, pasture, and seed.

Data pertaining to soils and prime farmland in Kittitas County are not currently available from NRCS. The soil survey for the county was conducted in the 1930s and is out of date; NRCS is in the process of conducting a new soil survey.

### **Grant County**

Approximately 30 miles of the proposed pipeline route cross lands specifically zoned for agricultural use under the Grant County Zoning Ordinance. With the exception of a two-mile stretch near Royal City, these agricultural areas are located between a point east of the Columbia River crossing (near Milepost 152), and the Grant County line (near Milepost 182). In addition, most other areas crossed by the proposed route in Grant County have zoning designations that permit agricultural uses of the land. Agricultural lands crossed by the proposed pipeline route are used mostly for irrigated and nonirrigated croplands, although some livestock grazing/rangelands and orchard areas are also crossed by the route. Primary crops grown in these areas include potatoes, beans, asparagus, mint, wheat, barley, and other grains. Alfalfa and various grasses are also grown for hay, pasture, and seed. Nearby orchards grow apples, pears, and apricots.

The proposed route is located on soils of the Burbank-Quincy, Schawana, Ekrub-Koehler, Starbuck-Bakeoven-Prosser, Ephrata-Malaga, Malaga, and Shano-Kiona-Starbuck soil associations. Portions of these soil associations are comprised of Ephrata fine sandy loam, Ephrata gravelly sandy loam, Prosser very fine sandy loam, and Shano silt loam; under specified conditions, these soil types are classified as Prime Farmland by the USDA Natural Resource Conservation Service.

## **Adams County**

All the land crossed by the proposed pipeline route in Adams County (approximately 9 miles in length) is specifically zoned for agricultural use under the Adams County Zoning Ordinance. Agricultural lands crossed by the proposed pipeline route are used mostly for irrigated and nonirrigated croplands, although some livestock grazing/rangelands and orchard areas are also crossed by the route. Primary crops grown in these areas include wheat and other cereal grains, potatoes, beans, and corn. Alfalfa and various grasses are also grown for hay, pasture, and seed.

Portions of the proposed route cross the following soil types: Royal fine sandy loam, Shano silt loam, and Shano very fine sandy loam. Under specified conditions, these soil types are classified as Prime Farmland by the USDA Natural Resource Conservation Service.

## **Franklin County**

Almost all of the land in the Franklin County segment of the proposed pipeline route (approximately 41 miles in length) is specifically zoned for agricultural use under the Franklin County Zoning Ordinance. With the exception of a few isolated parcels near Basin City, and the crossings of Eltopia West and Selph Landing Roads, agricultural areas can be found between the Franklin County line (near Milepost 186), and the Pasco city limits (near Milepost 226). In addition, most other areas crossed by the proposed route in Franklin County have zoning designations that permit agricultural uses of the land. Agricultural lands crossed by the proposed pipeline route are used for irrigated and nonirrigated croplands, orchard areas, and livestock grazing/rangelands. Primary crops grown in these areas include wheat and other grains, corn, potatoes, beans, carrots, and asparagus. Alfalfa and various grasses are also grown for hay, pasture, and seed. Nearby orchards mainly grow apples.

The proposed route is located on soils of the Shano-Warden, Quincy-Hezel-Schlomer, Neppel-Warden-Finley, Prosser-Starbuck-Neppel, Ottmar-Neppel-Sagehill, Sagehill-Quincy-Neppel, and Taunton-Sagehill soil associations. Portions of these soil associations are comprised of Finley very fine sandy loam, Neppel fine sandy loam, Neppel very fine sandy loam, Ottmar silt loam, Ottmar clay loam, Prosser fine sandy loam, Prosser silt loam, Sagehill very fine sandy loam, Schlomer silt loam, Shano silt loam, Taunton very fine sandy loam, Warden very fine sandy loam, and Warden silt loam; under specified conditions, these soil types are classified as Prime Farmland by the USDA Natural Resource Conservation Service.

### **5.1.7.2 Crop Characteristics**

The proposed pipeline route crosses through areas where agriculture is the dominant industry, and where a wide variety of crops are grown. This is especially notable in eastern Washington, where large stretches of the pipeline route run adjacent to agricultural crop fields. Table 5.1-7 below lists the primary crops that may be found in the vicinity of the proposed pipeline route as described in the county discussions above, identifies whether or not each crop is irrigated, and gives an average dollar value per acre of crop harvested.

**TABLE 5.1-7**  
**CHARACTERISTICS OF AGRICULTURAL CROPS GROWN IN THE VICINITY OF**  
**THE CROSS CASCADE PIPELINE ROUTE**

<b>Crop</b>	<b>Irrigation Requirement<sup>(a)</sup></b>	<b>Average Crop Value per Acre Harvested (\$/acre)<sup>(b)</sup></b>
Wheat	10% irrigated, 90% dryland	\$183
Barley	10% irrigated, 90% dryland	\$116
Oats	10% irrigated, 90% dryland	\$92
Corn	100% irrigated	\$464
Hay (includes alfalfa and various grasses)	50% irrigated, 50% dryland	\$299
Dry Beans	10% irrigated, 90% dryland	\$434
Peppermint	100% irrigated	\$988
Native Spearmint	100% irrigated	\$1,406
Scotch Spearmint	100% irrigated	\$1,731
Potatoes	100% irrigated	\$2,449
Asparagus	100% irrigated	\$1,779
Carrots	100% irrigated	\$2,636
Apples	100% irrigated	\$4,500
Apricots	100% irrigated	\$3,263
Bartlett Pears	100% irrigated	\$3,324
Winter Pears	100% irrigated	\$4,835

(a) These numbers are averages based on typical agricultural practice in Washington State. The specific type of irrigation actually used in the field, (central pivot, fixed pipe, flood, etc.) varies widely, and is based on several factors which vary from location to location. These factors include soil properties, land topography, and cost of installation.

(b) These numbers are ten year averages (1985-1994) based on the unit yield per harvested acre and the marketing year average price per unit.

Source: Washington State Department of Agriculture, 1995.

### **5.1.7.3 Prime Farmlands**

Table 5.1-8 provides an estimate of the amount of land within the proposed corridor that is classified by the Natural Resource Conservation Service as "prime farmland". This designation does not necessarily mean that the land is being used as farmland.



**TABLE 5.1-8  
PRIME FARMLANDS AFFECTED BY CONSTRUCTION**

<b>County</b>	<b>Area of Prime Farmland Affected by Construction<sup>(a)</sup> (acres)</b>
Snohomish	91
King	39
Kittitas	80
Grant	41
Adams	16.6
Franklin	62

<sup>(a)</sup> Assumes a 60 foot wide construction corridor.

#### **5.1.7.4 Impacts**

During route planning for the Cross Cascade Pipeline, attempts were made to route the pipeline along existing utility and road corridors, and to avoid areas with sensitive land uses, including orchards, livestock corrals, irrigated crop fields, etc. Although at specific locations in Grant and Franklin Counties the proposed route runs adjacent to fruit orchards, no fruit trees from these orchard areas are expected to be destroyed by the construction process.

The proposed pipeline route avoids all commercial livestock corrals, however it crosses through several miles of livestock pasture and grazing areas, particularly in eastern Washington. In these areas, temporary removal of fencing and gates to provide construction vehicle access could require restriction of livestock to other fenced areas and could temporarily reduce the amount of land available for grazing. Construction activities could also temporarily disrupt livestock access to supplementary feeding and watering stations for periods of up to three hours while temporary construction access is provided. Pasture and grazing areas crossed by the pipeline route will also experience small losses of available forage as vegetation is removed, and soil is disturbed and compacted by construction activities. However, no livestock mortalities are expected as a direct result of construction.

In determining impacts to cropland, it would be convenient to simply use the crop values in Table 5.1-9 along with the projected acreage impacts by crop to determine a dollar value of the impact. However, this methodology would be subject to large variations, as the specific crop grown in any particular field may vary from year to year, and season to season. In addition, farmers sometimes defer one or more planting seasons and let the land lay fallow to allow the soil to replenish itself. It is therefore impossible to precisely determine the crop type and acreage that may be impacted by project construction until the construction phase actually commences. As an alternative to this, a more general quantitative methodology was used. Impacts to agricultural crops were calculated based on the following:

- an inclusive classification of agricultural land as cropland,
- a calculation of the length of the proposed route through cropland areas,
- an assumption of a worst case scenario of a full 60-foot-wide construction corridor through all cropland areas,
- and existing statistical data on crops grown in each of the six project counties.

The results of this analysis are summarized in Table 5.1-9 below.

**TABLE 5.1-9  
CROSS CASCADE PIPELINE CROPLAND IMPACT ANALYSIS**

County	Identified Crops grown in the Vicinity of the Pipeline Route <sup>(a)</sup>	Total Cropland Area under Identified Crop Production in County (Acres) <sup>(b)</sup>	Size of Impacted Area (Acres) <sup>(c)</sup>	Percentage of Identified Cropland Potentially Impacted (%)
Snohomish	Hay	17,367	7.6	0.04
King	Hay	4,833	3.6	0.07
Kittitas	Corn, Potatoes, Wheat, Barley, Oats, Hay	56,933	65.5	0.12
Grant	Potatoes, Beans, Asparagus, Mint, Wheat, Barley, Oats, Corn, Hay	492,807	234.9	0.05
Adams	Wheat, Oats, Barley, Corn, Potatoes, Beans, Hay	472,070	63.3	0.01
Franklin	Wheat, Oats, Barley, Corn, Potatoes, Beans, Carrots, Asparagus, Hay	274,903	301.0	0.11

- (a) Hay includes alfalfa and various grasses grown for fodder.  
(b) These numbers are six year averages (1989-1994).  
(c) Assumes worst case impact of 60 foot wide right-of-way.

Source: Agricultural statistical data obtained from Washington State Department of Agriculture, 1995.

As can be seen in Table 5.1-9, in all six project counties, impacted cropland areas account for less than 0.2 percent of the total cropland typically planted with crops grown along the pipeline route. In these relatively small impacted areas, construction activities could disrupt a portion of the planting, growing, and/or harvesting of produce. The degree of impact would depend upon the timing and duration of the construction activity. Compaction of soil by construction equipment, removal of crops and topsoil to prepare the right-of-way and staging areas, and introduction of noxious weeds by construction vehicles, could all lead to a partial loss of productivity of directly adjacent croplands. Temporary disruption of access across the right-of-way to adjoining cropland parcels could also reduce the efficiency and productivity of the farming activity.

During pipeline construction through agricultural areas in both eastern and western Washington, the active construction zone is expected to move along the pipeline route at a rate of approximately 1.7 to 2.5 miles per day. In addition, it is expected that the active construction zone will pass any one location along the route in approximately 10 days. Due to the short duration of this disturbance, coupled with the small size of the impacted cropland area, construction along the proposed pipeline route is expected to have a minor and temporary adverse effect on adjacent cropland productivity. Similarly, due to the short duration of the construction disturbance, the construction activity is expected to have a minor and temporary adverse effect on adjacent livestock grazing activity.

During project planning and prior to construction, coordination with affected landowners will occur to further minimize the impacts of construction on adjacent agricultural lands, and to mitigate any disruption that may be caused by the construction activities. In addition, OPL will incorporate several environmental design features into the project (see Section 5.1.7.3, Mitigation Measures).

Upon project completion, the proposed pipeline will be buried and the right-of-way restored to its pre-construction state. As mentioned above, due to the short-term nature of the construction activities at any one section of the proposed route, the impacts to agriculture are not expected to be of long duration, and few of the impacts will continue past the construction stage. However, certain activities in the right-of-way will be restricted for the life of the project. These activities include excavation of areas in the right-of-way and the planting of woody tree species.

Based on the anticipated operational and maintenance activities discussed in Section 2.3 Construction on Site, no adverse impact on adjacent agricultural activities is anticipated during the operation phase of the project.

### 5.1.7.5 Mitigation

The impact to agricultural lands from the proposed project will be temporary during the construction phase of the project.

Several environmental design features will be incorporated into the project to minimize the impact of construction on adjacent agricultural activities. No additional mitigation is proposed. Environmental design features include the following:

- The proposed pipeline has been routed at the edge of fields and avoids mechanical irrigation circles in almost all cases.
- As part of landowner easements, OPL has agreed to route the line along property or field boundaries to avoid impact to orchards or crops such as asparagus which would have long-term impacts should the pipeline be trenched through the asparagus field.
- To the extent possible, construction will also be timed to avoid going through cropped hay or grass fields. If it is not possible to avoid these fields during the growing season, the payment for easements will also include the expected value of the particular crop for the season lost during construction.
- Wherever feasible, construction activities will occur outside of the planting/growing/harvesting period to minimize cropland productivity impacts.
- Compensation to farmers for crop removal and/or damage or lost productivity caused by the construction activities will be negotiated based on actual impact.
- Following construction, the agricultural lands will be restored to their pre-existing soil types and graded levels, and agricultural activities will be able to resume over the top of the pipeline.
- Compensation to farmers for land permanently removed from productive use by construction of the project will be negotiated based on the productive use of that land.
- Equipment cleaning and washing procedures will be implemented to prevent the spread of noxious weeds.
- OPL will coordinate construction activities with farmers to ensure (1) livestock access to feeding and watering stations, and (2) continued access across the right-of-way for farm equipment.
- After the pipe has been lowered into the trench, the trench will be partially backfilled with excavated soil. The remaining top 8 inches of the trench will be backfilled with topsoil. Compacted soil in the work areas adjacent to the backfilled trench will be loosened by tilling with a disk tiller as part of the right-of-way restoration.
- The pipeline corridor will be replanted with native vegetation or as requested by land owner after completion of construction.

- Fences and gates removed during construction will be replaced.
- A minimum of 4' of soil cover will be placed over the pipeline where deep tilling occurs.

## TABLE OF CONTENTS

	Page
SECTION 5.1 LAND AND SHORELINE USE .....	5.1-1
5.1.1 RELATIONSHIP TO EXISTING LAND USE, LAND USE PLANS, AND ESTIMATED POPULATION .....	5.1-1
5.1.2 HOUSING .....	5.1-72
5.1.3 LIGHT AND GLARE .....	5.1-73
5.1.4 AESTHETICS .....	5.1-74
5.1.5 RECREATION .....	5.1-103
5.1.6 HISTORIC AND CULTURAL FEATURES .....	5.1-103
5.1.7 AGRICULTURAL CROPS/ANIMALS .....	5.1-130
 TABLE 5.1-1	
LAND USE SUMMARY .....	5.1-22
TABLE 5.1-2	
VISUAL QUALITY CRITERIA .....	5.1-75
TABLE 5.1-3	
VISUAL IMPACT CRITERIA .....	5.1-90
TABLE 5.1-4	
SUMMARY OF VISUAL IMPACTS PER PIPELINE ROUTE SEGMENT .....	5.1-94
TABLE 5.1-6	
SUMMARY OF SITES IDENTIFIED DURING THE FIELD SURVEY .....	5.1-115
TABLE 5.1-6	
SUMMARY OF ISOLATES IDENTIFIED DURING FIELD SURVEY .....	5.1-120
TABLE 5.1-7	
CHARACTERISTICS OF AGRICULTURAL CROPS GROWN IN THE VICINITY OF THE CROSS CASCADE PIPELINE ROUTE .....	5.1-134
TABLE 5.1-8	
PRIME FARMLANDS AFFECTED BY CONSTRUCTION .....	5.1-135
TABLE 5.1-9	
CROSS CASCADE PIPELINE CROPLAND IMPACT ANALYSIS .....	5.1-136
 FIGURE 5.1-1a - LAND USES ALONG THE PIPELINE ROUTE .....	5.1-3
FIGURE 5.1-1b - LAND USES ALONG THE PIPELINE ROUTE .....	5.1-4

FIGURE 5.1-1c - LAND USES ALONG THE PIPELINE ROUTE .....	5.1-5
FIGURE 5.1-1d - LAND USES ALONG THE PIPELINE ROUTE .....	5.1-6
FIGURE 5.1-1e - LAND USES ALONG THE PIPELINE ROUTE .....	5.1-7
FIGURE 5.1-1f - LAND USES ALONG THE PIPELINE ROUTE.....	5.1-8
FIGURE 5.1-2 - EXISTING VIEWPOINT - KITTITAS TERMINAL.....	5.1-87
FIGURE 5.1-3 - SIMULATED VIEWPOINT - KITTITAS TERMINAL .....	5.1-88
FIGURE 5.1-4 - EXISTING AND SIMULATED VIEWS OF PIPELINE RIGHT-OF-WAY THROUGH RANGELAND .....	5.1-93
Figure 5.1-5 North Bend Pump Station Simulated Viewpoint.....	5.1-98
Figure 5.1-6 North Bend Pump Station Simulated Viewpoint.....	5.1-99
FIGURE 5.1-7 Beverly Burke Substation Existing Viewpoint .....	5.1-100
FIGURE 5.1-8 Beverly Burke Substation Simulated View .....	5.1-101